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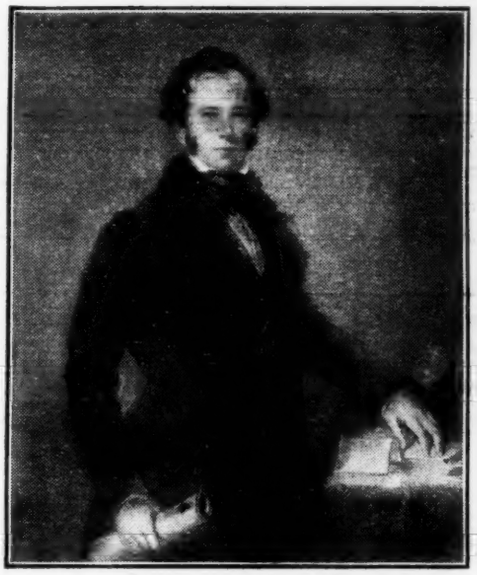
British Medical Association Centenary



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THE CHANGES IN THE MEDICAL PROFESSION AND ADVANCES IN MEDICINE DURING THE LAST FIFTY YEARS*

BY

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In considering the problem, always difficult when the choice is courteously left to the lecturer, of what subject to select, it seemed worth while to touch briefly on some of the changes that have taken place in the medical profession and medicine during the last half-century. This decision was made nearly a year ago, and so is not a compliment to the recent series of "Fifty Years" articles in the *Times*. Reminiscences are always tempting to those in the stage of garrulous anecdotage, and should not be entirely devoid of gratification to those with a future, and it is hoped without a "past," who should thereby realize how much better placed they are in many respects than their seniors. For it is a matter of common knowledge, and not merely a complaint of the *detractor temporis acti*, that the enormous advances in medical science and art have rendered the practice of medicine far more satisfactory for the medical profession and for their patients than in the past. No doubt exactly the opposite conclusion must be drawn from a survey of some other conditions of life in this country before and after the war; in the 'eighties the times were spacious and prosperity seemed a settled attribute of the United Kingdom; the race for speed was comparatively slow, motor cars and aeroplanes were undreamt of and telephones were toys and not tormentors; the income-tax was counted in pennies and not in shillings and sixpences; and class feeling had not been accentuated by the methods of Limehouse.

Though manners now seem to be less formal and pontifical, and the authority of mere seniority to be less dominant, human nature remains much the same. The outward trappings of medical men have respectfully followed other fashions; beards or side-whiskers, almost universal among the grave and reverend seniors, have gone, as have the frock-coat and silk hat which were donned as the outward sign of qualification. A brougham was the hall-mark of the consultant, and at the hospital I knew best, the assistant physicians and assistant surgeons were drawn to the hospital by one horse, whereas the physicians and surgeons dashed into the Square in a carriage and pair. The assistant physicians and surgeons often had students living in their houses in Harley Street or Wimpole Street, and thus dispensed with the financial support now obtained from additional doorplates. Titles were exceptional in the last century, and seldom bestowed, except on the presidents of the Royal Colleges and on Court physicians. Lister, in 1897, was the first man to be made a peer for his purely medical services. During and after the war titles became comparatively frequent. The war forms a permanent wall between the past and the present conditions, both in the world at large and in that of medicine. In Victorian and Edwardian times there was a continuity, which was suddenly broken in August, 1914, never to return.

Changes in "Harley Street"

The medical quarter of London, which may be spoken of for short as "Harley Street," has undergone the change of which the City of London set the example long ago. Formerly the City magnates and merchants lived over their offices and shops, whereas now the resident population around the Bank of England must be extremely modest, both in number and in pocket. The proportion of professional doorplates and addresses—for these are not identical, though I cannot pretend to have counted the doorplates *in situ*—to the houses in the Harley Street and Wimpole Street preserves has risen enormously. The *Medical Directory* for 1882 gives sixty-one names in Harley Street and fifty-five names in Wimpole Street, Upper Wimpole Street, and Devonshire Place (in the last one only), which run parallel to and are a little longer than Harley Street. The numbers of the addresses in the two streets, much the same then, have changed both absolutely and relatively. In the *Medical Directory* of 1932 the corresponding numbers are 750 and 375; an average of five addresses to each of the 152 houses in Harley Street. The difference between the popularity of the two great professional streets may perhaps be explained by the lure of the phrase "the Harley Street specialist." Many medical men of course still linger and live in these streets, but far more do not, and quite a considerable proportion also practise elsewhere—for example, in the country. Doorplates, like mushrooms, are always springing up with bright hopes; this was notably the case after the war, when surgical experience and a gratuity rendered the gratification of ambition in Harley Street possible, at least for a time.

London Teaching Hospitals

The teaching hospitals in London have not increased in number, otherwise they are, of course, much changed. In the last century members on the full staff of some of the larger hospitals received a considerable sum as teachers in the medical school; for then there were not any whole-time teachers of anatomy, physiology, and pathology, the lectures in which were delivered by the members of the medical staff. A surgeon and lecturer on anatomy at St. Bartholomew's told me that he used to receive as his share £1,600 a year, whereas at the time he reminisced the corresponding cheque as surgeon was under £40. The high-water mark was the £2,000 that Sir William Savory (1826–95) received when also lecturer on surgery at the same medical school. Demonstrators and registrars received an honorarium rather than a living wage, and hanging on in the hope of promotion to the permanent staff, with its promise of the further decades of "bread and butter" and of "cakes and ale," they depended for bread on fees for coaching, literary, and other forms of service. It was indeed a question of survival of the fittest, including in the definition of the fittest the possession of private means. The avenue to the surgical staff was through the anatomy department, and to the physicians' side, though less rigidly, through the physiological laboratory, and later, and very wisely, the post-mortem room. Surgeons before the advent of laparotomy were not over-busy, and acting up to the axiom, as slyly modified by my colleague at St. George's Hospital, the late Clinton Dent (1850–1912), "Chirurgus sum! nihil medicum a me alienum puto," were not averse to looking after cases of typhoid fever and paraplegia, and acting as the medical officers of life assurance companies. Whole-time clinical professors and "units" came into being after the war.

* The Bolingbroke Lecture delivered on May 25th, 1932.

Fifty years ago there were far more candidates for the medical than for the surgical side of teaching hospitals; at one time there were twenty waiting about at St. Bartholomew's Hospital, so that the physicians' side could have been at once filled up twice over at least. Conditions have much changed in this respect. The present tendency of municipal medicine is to segregate into special institutions diseases which previously were seen in general hospitals; as a result tuberculosis, venereal diseases, fevers, and other diseases, such as ophthalmia neonatorum, are no longer so available for teaching purposes in the metropolitan hospitals.

Nursing homes were very few in number in the 'eighties, and of course operations, which were comparatively infrequent, were mainly done in the patients' homes. Group medicine and diagnostic clinics, such as Duff House, now Ruthin Castle, and the New Lodge Clinic, are creations of this century. Diphtheria was treated in the general wards, and as a matter of fact very seldom spread; but tracheotomy in those pre-antitoxin days was very common, and often a prelude to death.

Specialism

During the last half-century one of the most important events has been the complete recognition of legitimate specialism. Hospitals for special diseases, such as the Royal Ophthalmic Hospital (established in 1804), the Royal Hospital for Diseases of the Chest (1814), and the Royal Ear Hospital (1814), are more than a century old. But the existence of specialism was sternly frowned upon by the leaders of the profession; in 1860 the *British Medical Journal* published a protest against the "growing evil" of special hospitals, which "will end in draining our great centres of clinical instruction of their best cases and of their funds at the same time." This protest was signed by the Presidents of the Royal College of Physicians of London and the Royal College of Surgeons of England, the President of the General Medical Council, and other prominent medical men. This prejudice lasted until late in the last century, when the special departments of the teaching hospitals in London were often in the charge of assistant physicians and assistant surgeons who looked forward to general and not special practice. The need for specialties was thus admitted, but with a compromise in order to prevent or limit the creation of whole-time specialists. Some special hospitals, such as the Royal Ophthalmic Hospital ("Moorfields" from its first site), the Brompton and other hospitals for diseases of the chest, and children's hospitals, were not regarded with displeasure by the medical powers; in fact their staffs were largely composed of general physicians and surgeons attached to teaching hospitals.

With the clear crystallization of specialism, mainly demanding not only concentrated knowledge but also expert manipulative skill, such as ophthalmology, laryngology, otology, and gynaecology, there has been a corresponding and natural tendency to *partial specialism* in medicine and surgery—for example, in children's diseases, cardiology and neurology, in orthopaedics and genito-urinary diseases, which are compatible with general medical or surgical practice. Time will show what further differentiation in this direction will occur.

Special Diplomas and Post-Graduate Teaching

A closely allied result of the vast expansion of knowledge is the overburdened condition of the present curriculum, from which each specialist loyally feels that his subject should not be omitted. It is obvious that a sound education in medicine as a whole should be assured on qualification to practise, and that specialization should be a post-graduate event, a competent knowledge being shown by the possession of a special diploma granted after further instruction and an examination. Seven diplomas—in public health, tropical medicine and hygiene, psychological medicine, ophthalmic medicine and surgery, laryngology and otology, gynaecology and obstetrics, and radiology—are now granted jointly by the Royal College of Physicians of London and the Royal College of Surgeons of England. The Universities of Cambridge, Liverpool, and Edinburgh grant diplomas in radiology, and that of Oxford one in ophthalmology (D.O.). The British College of Obstetricians and Gynaecologists, established in 1929, has powers either alone or in co-operation with authorized teaching and examining bodies to grant to registered medical practitioners diplomas or other equivalent recognition of special knowledge in obstetrics and gynaecology.

Post-graduate teaching has had an uphill fight in London; in 1899 the Medical Graduates' College and Polyclinic was started in Chenies Street, with its great pillar of support in Sir Jonathan Hutchinson, but it suffered from the absence of beds. Continuous, as apart from short courses of, post-graduate teaching at hospitals with medical schools has never been a success. The West London Hospital did a large amount of teaching, and after the war the Fellowship of Medicine was formed. The problem of a post-graduate school worthy of London will, it is hoped, be solved by the new Post-Graduate Hospital and Medical School at Hammersmith, which starts with very strong Governmental and professional backing.

Some Other Changes

In 1891 the medical curriculum was lengthened from four to five years; and until 1886 one qualification only, most commonly the M.R.C.S. or the L.S.A., was obligatory. The combined M.R.C.S., L.R.C.P. of the Conjoint Examining Board in England dates from this time. Until 1897 there was a medically legal, or at any rate not illegal, class of unqualified assistants who worked under general practitioners for a meagre wage and took charge of the poorer strata of the practices; some of these men eventually gained a medical qualification, but others went on for years and acquired a fair rule-of-thumb knowledge of treatment. Their legal existence was terminated in 1897, when to employ them rendered the practitioner liable to be called before the General Medical Council for the offence of "covering."

The London School of Medicine for Women was opened in October, 1872, and since then, and especially during and immediately after the war, a large number of women have entered on "the physic line." Their struggle for recognition is over now; the universities and the licensing bodies have opened their degrees and diplomas to them.

As a result of the National Insurance Act of 1911 the position of medical men who had previously been connected with "clubs" or contract practice under the Friendly Societies was changed; they became panel practitioners, and there are now nearly 16,000 at the call of more than seventeen million insured persons. This change, which at first aroused great opposition, has, though not free from adverse criticism, been a source of financial gain to the practitioners on the panel. The number of registered medical men has more than doubled in the last half-century: in 1881 there were 22,936; at the end of last year there were 55,604.

A noticeable feature of this century has been the endowed organization of scientific medical research by State and private benefaction. Apart from investigations carried out in special directions by the Local Government Board, which in 1919 was merged in the Ministry of Health, the establishment in 1913 of the Medical Research Fund—also an offspring of the National Insurance Act—was the first effective step of the Government in this country to

support scientific medical research. The munificent Rockefeller Foundation for Medical Research in New York has on a large scale lived up to its motto, "The Well-being of Mankind throughout the World."

In 1907 the Royal Medical and Chirurgical Society, which in 1887 had 745 Fellows, was transformed by amalgamation with seventeen other previously separate societies into the Royal Society of Medicine, which now has 4,160 Fellows, 37 honorary Fellows, 191 corresponding members, and 60 associates. It consists of twenty-four separate Sections, and has an admirably organized library containing 150,000 volumes. Further, it has social activities, and combines with its educational benefits some of the amenities of a club. Great expansion of the work and membership of the British Medical Association has been one of the notable features of the medical life in this country; in 1882 it had 9,563 members, now it has 35,000, a three-and-a-half-fold growth.

Great changes have taken place in the nursing profession. The Nurses' Registration Act was passed after considerable delay and discussion in 1919, and there are now 25,440 nurses registered by examination on the different parts of the State *Register*. Organization has improved the material circumstances and the standard of efficiency among these hard-worked and badly paid workers. Fifty years ago there were few careers except nursing open to women; now there are many avenues of activity, and the candidates for entrance into the nursing profession are not so numerous as they were. Further, they are younger, and the average age at entry, formerly over 21 years, has unfortunately been lowered, as it is difficult to fill in the years after school education has ceased. The Central Midwives Board, established by the Midwives Act, 1902, has greatly improved the education, has regulated practice, and keeps the roll of certified midwives. In 1926 the course of training for midwives was lengthened to six months for trained nurses, and to a year for other candidates.

ADVANCES IN MEDICINE

The advances in medicine, meaning by that word "physic" or what was once correctly described as internal medicine, if less dramatic, have been wider in scope than those of surgery. Thus tropical medicine, with the help of bacteriology and protozoology under the leadership of Sir Patrick Manson (1844–1922), the "Father of Modern Tropical Medicine," has developed enormously. Sir Ronald Ross's proof of the mosquito-borne infection of malaria in 1897 is an outstanding example of the part played by insect vectors and human carriers of infection.

The growth of public health activities and so of preventive medicine by the State has greatly increased since the establishment in 1919 of the Ministry of Health. Maternity and child welfare clinics, the school medical service, and clinics for dental, tuberculous, and venereal diseases are now active in preserving the health of the nation. The health of industrial workers supervised by the Home Office is becoming a special branch of medicine—industrial medicine—in which prevention plays a prominent part.

While many advances have taken place in the last half-century and many new suggestions have had their day, especially in treatment, some old views and methods of treatment tried and discarded have been revived, improved, and approved. The doctrines of the iatrochemists, Paracelsus, van Helmont, and F. Sylvius of Leyden, in the sixteenth and seventeenth centuries, have now assumed a different character in biochemistry and metabolism. Blood transfusion, practised in the seventeenth century by Jean Denys of Montpellier and Richard Lower of Oxford, was practically abandoned until in this century when the technique was rendered comparatively safe by the discovery of blood groups (Jansky, 1907; Moss, 1910), and during and since the war has been extensively employed.

In the last quarter of the last century the keen study of morbid anatomy was succeeded by the investigation of the causes of infective diseases in the light of bacteriology, and as a result the importance previously ascribed to constitution and diathesis practically disappeared, though recently it has revived with the realization that an appropriate condition of the "soil" is necessary in addition to the "seed" of disease. The present century has been noteworthy for the special attention paid to the functional disorders of disease, and for the introduction of functional tests of various kinds, such as test meals of gastric secretion, examination of the blood-urea in renal disease, of the blood-sugar in diabetes mellitus, of the blood-bilirubin (Hijmans van den Bergh reaction) in jaundice, and of the basal metabolic rate which has been of special value in diseases of the thyroid gland. The antecedents and early stages of disease, in which prevention is more especially effective as structural change may not yet have resulted, have attracted attention, particularly from Sir James Mackenzie.

The discovery of vitamins or accessory food factors, which have been called "extraneous hormones," and the recognition of the avitaminoses or diseases due to their absence, such as rickets and beri-beri (a special form of endemic neuritis), were due to the exertions of a number of investigators, among whom C. Eijkman and Sir Gowland Hopkins, the Nobel prizemen of 1929, are prominent. Morbid states due to their excess—hypervitaminoses—have been induced in experimental animals.

The Rise of Bacteriology

Bacteriology, due to the genius of Louis Pasteur (1822–95), and Robert Koch (1843–1910), made its way slowly in medical London, and in the early 'eighties was often referred to with a condescending smile as "the germ theory," thus intimating that it was the obsession of a crank. Well on in the 'nineties I remember a shrewd general practitioner recommending an investigation by a bacteriologist whom he described as being "as clever as a monkey." The word "bacteriology," imported from Germany, appears from the *Oxford Dictionary* to have been first used in this country in August, 1884, in the pages of the *Academy*. In the autumn of 1889 I attended one of the early practical courses of bacteriology available in London; it was given by E. E. Klein (1844–1925) at the College of State Medicine, 102, Great Russell Street, W.C. There were about half a dozen men in all, including Sir F. W. Andrewes (1859–1932) who was house-physician with me, Sir William Hamer, also house-physician in the previous year at St. Bartholomew's, and G. I. Schorstein (1863–1906) of the London Hospital. Klein was then much interested in the grouse disease and the bacillus he found in it, afterwards shown to be *B. coli*. Spontaneous generation of micro-organisms, long before discredited by Spallanzani in 1777, was finally disproved by Pasteur in 1862; but the tenet died hard in medical London, where H. C. Bastian (1837–1915) revived it in 1876, and as late as 1906 had a paper accepted by the Royal Medical and Chirurgical Society "On the *de novo* origin of bacteria, bacilli, vibriones, micrococci, torulae and moulds in certain previously superheated saline solutions, within hermetically sealed vessels." Probably his senior and eminent position in the profession weighed with the committee, for the referees were not so considerate.

In the 'eighties bacteriology rapidly went ahead; Koch discovered the tubercle bacillus (1882), the cholera vibrio (1883), and through his pupils Gaffky, the typhoid bacillus (1884), Loeffler, the diphtheria bacillus (1884), Kitasato, the bacilli of tetanus (1889) and of plague (1894). The discovery

of bacterial poisons led to the production of antitoxic serums, especially successful in diphtheria and tetanus. Immunology followed with serological tests, such as the agglutination reactions for enteric, undulant and other fevers, complement-deviation tests, such as the Wassermann reaction for syphilis (1906), and cutaneous tests for sensitizations. The recognition of ultra-microscopic or filter-passing viruses, which are pathogenic for plants, animals, and man, dates from 1898, and a large number of diseases have been ascribed to their influence.

The Surgical Revolution

Every period is one of transition, but it may be safely said that the last fifty years have seen far greater changes than any similar period in the history of medicine. First and foremost is the transformation and enormous expansion of surgery due to Lister's teaching, and the resulting revolution in technique which made safe the operative procedures rendered painless by the introduction of anaesthetics about the middle of last century. Lister came to London in 1877, by invitation, to succeed Sir William Fergusson (1808–77) as surgeon and joint professor of clinical surgery at King's College Hospital. He gave up a large school and plenty of beds in Edinburgh in order to accelerate the adoption of his methods in London; but it is doubtful if he converted more than a very few of his metropolitan contemporaries, and he might, like William Harvey, have said that no man over 40 years of age accepted his teaching. Lister's visitors in the operating theatre and the wards at King's College Hospital were mainly curious foreigners, and he was even openly derided by at least one of his colleagues. But the really influential opposition came from Sir William Savory, surgeon to St. Bartholomew's Hospital, who carried on the tradition of oratory of his surgical seniors at that great hospital—Sir William Lawrence and Sir James Paget. At the meeting of the British Medical Association at Cork in 1879 his address in surgery dealt with "The Prevention of Blood Poisoning in the Practice of Surgery," and its adverse verdict was described by Sir Rickman Godlee as "the swan-song of the already dwindling race of pre-antiseptic surgeons." I dressed for Savory in 1884, and so saw the routine treatment of operation and other wounds by poultices, much "laudable" pus, and the discarded frock-coats in which surgeons of that now distant day operated.

Surgery, which previously had been mainly concerned with the extremities, was enabled to invade the abdomen, the head, and the chest with safety to the patient. The development of abdominal surgery has been phenomenal; it was largely initiated by the pioneer example of Sir Spencer Wells, the ovariotomist, before the period now under consideration, and by Lawson Tait. The word "appendicitis," much criticized as a barbarous hybrid of Latin and the Greek termination *itis*, was constructed by R. H. Fitz of Boston, Mass., in 1886. It does not appear in the first volume of the *Oxford Dictionary*; the editor, Sir James A. H. Murray, told me that when that volume of the *Dictionary* was in course of preparation (1888) he consulted a regius professor of medicine, and was informed that it was not necessary to include it, as the disease was very rare. Although it had been described many years before, by James Parkinson in 1812, by John Burne in 1836, by Thomas Hodgkin in the same year, and by Thomas Addison in 1839, appendicitis was not generally recognized until influenza reappeared in this country in 1889; it was then called "perityphlitis," a term dating from 1843, and entered in a subsequent volume (1905) of the *Oxford Dictionary* with a reference to appendicitis. Nothnagel suggested the now forgotten name of scolecoiditis (Σκώληξ = a worm). Its operative treatment was largely due to the influence of Sir Frederick Treves in 1889 and after; the recognition of "surgical dyspepsia," due to diseases of the appendix (1910) and of the gall-bladder (1908), and the diagnosis of duodenal ulcer (1910) were mainly due to Lord Moynihan's advocacy.

The penetration of surgery into the body cavities, including the skull, with the evolution of the neurological surgeon, has tended to break down the artificial distinction between surgeons and physicians; at least it has resulted in the surgeon doing more and the physician doing less abdominal work. This is also shown in the change of title of those who specialize in diseases of women: formerly obstetric and gynaecological physicians, they have become surgeons both in name and in deed. Antiseptic surgery was later succeeded by aseptic surgery.

Tuberculosis: Syphilis

Koch's discovery of the tubercle bacillus in 1882, though prophesied by Villemin in 1865, is one of the milestones in the history of medicine. I remember seeing Samuel Gee (1839–1911) sitting down to stain it, with the house-physician, clerks, and nurses in attendance, in a ward at St. Bartholomew's, for there were no clinical laboratories or official clinical pathologists for many years after the early 'eighties. Laboratory medicine, now so dominant in diagnosis, did not exist, and diagnosis depended on physical examination and on experience with its product, clinical instinct, of which, though a very real acquisition, there have been rather mocking definitions, such as "that property you but nobody else possesses," and more concisely as "blind man's bluff."

The open-air treatment of tuberculosis was originally advocated and carried out by George Bodington of Sutton Coldfield, Warwickshire, in 1840, and by Henry MacCormack of Belfast in 1855, but was not seriously adopted in this country till 1895, after it had been practised by H. Brehmer at Göbersdorf in Silesia from 1854, E. L. Trudeau in 1884 in the Adirondacks, and by Otto Walther at Nordrach in the Baden Black Forest. Tuberculosis sanatoriums became common at the end of the century, and since the war tuberculosis colonies, such as Papworth, have been established as the result of the energy of Sir Pendrill Varrier-Jones. The treatment of surgical tuberculosis by carefully regulated exposure to the rays of the sun has been practised by A. Rollier at Leysin in Switzerland, and by Sir Henry Gauvain at Alton in Hampshire; artificial heliotherapy or actinotherapy has since come into vogue. Treatment by tuberculin, first brought out by Koch in 1890, has been extremely disappointing. The most valuable recent addition to the treatment of pulmonary tuberculosis has been artificial pneumothorax.

The *Treponema pallidum* was discovered by Max Schaudinn in 1905, the Wassermann reaction followed in 1906, in 1910 Ehrlich introduced the salvarsan treatment, and in 1917 Wagner von Jauregg of Vienna originated the treatment of general paralysis of the insane by induced malaria.

Cardiovascular Disease

During the era of morbid anatomy—the later half of the nineteenth century—physical signs of the underlying structural changes were enthusiastically cultivated, and in the case of the heart, murmurs were the data on which diagnosis depended. Attention has now been transferred from the condition of the valves to the functional efficiency of the cardiac muscle. The use of the polygraph and the electrocardiograph has so greatly added to the knowledge of heart disease that a new cardiology has resulted from the work of Sir James Mackenzie and Sir Thomas Lewis. New forms of cardiac disease, such as auricular fibrillation and flutter, have been discovered, and coronary thrombosis has been separated from angina

pectoris, in which it had previously been included. The routine use of the sphygmomanometer has led to the general recognition of the importance of a raised blood pressure and of its existence, at any rate for many years, without renal disease—the hyperpiesia of Clifford Allbutt, the essential hypertension of American writers.

Diseases of the Blood

The knowledge of diseases of the blood-forming organs and of the morphology of the blood corpuscles has advanced enormously, largely as the result of Ehrlich's introduction of special staining methods. Just as histological examination enables the nature of a tumour to be determined, so can the blood diseases be classified. It may be noticed that one of the most familiar diseases fifty years ago—chlorosis—has now become extremely rare, a change of type of disease which has been ascribed to improved hygienic conditions in exercise, dress—especially the disappearance of tight-lacing—and a better diet. Simple achlorhydric anaemia, however, in middle-aged women has now been recognized. Addisonian anaemia has been dutifully investigated at Guy's by A. F. Hurst and his colleagues, who have proved the almost constant association with achlorhydria and its close relation to subacute combined degeneration of the spinal cord. Its successful treatment by liver extract and by hog's stomach has rendered the title " pernicious " no longer so applicable as formerly.

Endocrinology

The only diseases of the ductless, endocrine, or glands of internal secretion commonly recognized fifty years ago were Addison's disease of the suprarenals (1855) and affections of the thyroid—goitre, exophthalmic goitre, myxoedema, and cretinism. The conditions of excessive and abnormal secretion were not then realized, exophthalmic goitre being regarded as a disease of the nervous system. The treatment of myxoedema by thyroid was introduced by G. R. Murray, by hypodermic injection, in 1891, and by F. Howitz, Hector Mackenzie, and E. L. Fox, by oral administration, in 1892. The thyroid origin of exophthalmic goitre was established by W. S. Greenfield in 1893, and the prevention of simple goitre by the administration of iodine became widely adopted, largely as the result of the work of D. Marine in North America during this century, although as a method of curing goitre it was employed as long ago as 1820 by C. W. Coindet, but dropped out of fashion to be reintroduced in 1922 by H. S. Plummer of the Mayo Clinic. The operative treatment of exophthalmic goitre and toxic adenoma has become established ; thyroxine has been isolated and synthesized.

Acromegaly, first described clinically in 1886 by Pierre Marie, may be instanced as an example of the way in which knowledge of the endocrine glands has been elaborated. At first regarded as due to inadequacy of the pituitary, it was then correlated with overactivity of the anterior lobe of that gland. Harvey Cushing, who initiated the operative treatment of acromegaly, has recently pointed out that enlargement of the anterior lobe and hyperpituitarism may be due to adenomas of two kinds: (1) an acidophil-celled adenoma of the anterior lobe of the pituitary which causes acromegaly in the adult ; (2) a basophil-celled adenoma of the anterior lobe, often small and so prone to be overlooked, which gives rise to a group of symptoms of a different character—namely, rapid and painful obesity, amenorrhoea in females and impotence in males, hypertrichosis of the face and trunk in adolescents, a dusky appearance of the skin with lineae atrophicae, and high blood pressure, which Parkes Weber has recently suggested should be called " Cushing's syndrome." Alfred Fröhlich's adiposo-genital dystrophy (1901), commonly associated with hypophyseal duct tumours (Cushing), is now well known. The extract of the posterior lobe of the pituitary has been successful in temporarily alleviating the polyuria of diabetes insipidus, its action thus resembling that of insulin in diabetes mellitus. Pituitary extract has been largely used for its action in intestinal atony.

The parathyroids were first described anatomically in 1880 by Ivar Sandström, who regarded them as embryonic rests of the thyroids. In 1896 Vassale and Generali showed that their removal caused tetany, and in 1908–9 W. G. MacCallum and C. Voegtlin proved that they controlled calcium metabolism. The causal relation of parathyroid adenomas to mobilization of calcium from the skeleton and the production of osteitis fibrosa cystica dates from 1907, and has been much discussed recently. The isolation in a crystalline form (Takamine, 1901) and synthetic production of adrenaline, secreted by the medulla of the adrenals, have proved to be useful in asthma and some forms of minor surgery. The recent preparation (" cortin ") from the adrenal cortex promises to be of real value in Addison's disease.

Neurology and Psychiatry

Neurology was the favourite branch of medicine for the keen spirits of the latter half of the last century, and especially centred at Queen Square has continued its course, but now has more rivals—for example, in metabolism. Psychiatry is no longer such a close preserve for physicians in charge of asylums or, as they are now preferably called, mental hospitals. It has undergone great changes ; it is more closely correlated with general medicine—for example, the causal influence of toxaemias and local infections ; and the classification of mental diseases has been fundamentally altered. The work of Sigmund Freud of Vienna on the causation of psychoses and psychoneuroses by a process of active forgetting or repression of an unpleasant experience, and the treatment by psycho-analysis, have suffered from the assumption that the sexual instinct is stronger than those of self-preservation and the herd, but must be recognized as a valuable advance. The prevention of mental disorder has been taken in hand by the establishment of psychiatric clinics attached to general hospitals.

Radiology

Apart from bacteriology, which, like medicine, is a biological science, no discovery in pure science has been of such signal service to the practice of surgery and medicine as that of *x* rays in November, 1895, by W. K. von Roentgen (1845–1923), professor of physics at Würzburg. Utilized with such success in diagnosis that failure to appeal to skiagraphy in some surgical conditions, such as fractures, may constitute professional neglect, *x* rays were later employed therapeutically in many conditions ; but its help in diagnosis is both more successful and more widespread than in treatment. An invaluable addition to physical examination, it is to some extent more effective than the older methods of auscultation and percussion. Radium, discovered by the Curies in 1898, has been most successful in the treatment of accessible malignant disease.

Therapeutics

In the third quarter of the last century devotion to morbid anatomy—the inspection of, and meditation on, the end-results of disease—had bred an honestly pessimistic attitude of therapeutic nihilism, which lasted into the 'eighties and 'nineties. Scepticism about the value of interference with the *vis medicatrix naturae* had been stimulated by the excesses of the two-edged weapon of

treatment, for in the earlier part of the nineteenth century bleeding and mercurial salivation had run riot. The main advances in treatment have almost all been comparatively recent and the outcome of laboratory investigation, such as serums, especially diphtheria antitoxin, various vaccines, particularly the prophylactic antityphoid vaccine (Almroth Wright, 1897) used in the South African war, and as "T.A.B." (typhoid and paratyphoid A and B) vaccine in the European war. Insulin (Banting, Best, and Macleod, 1922) has transformed the treatment and outlook of diabetes mellitus. The same result has followed the dietetic treatment, by liver (Minot and Murphy, 1927) and gastric mucous membrane, of pernicious anaemia; the substitution treatment, by thyroid preparations, of myxoedema and cretinism is an outstanding success of organotherapy; and the use of salvarsan preparations (1910) in syphilis is a notable example of Ehrlich's chemotherapy.

A CENTURY OF BRITISH SURGERY

BY

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Surgery in 1832 was based wholly on anatomy; surgery in 1932 has the additional support of bacteriology. In this hundred years brilliant surgery reached its zenith, waned, and finally died. Operating surgeons in 1832 were only to be found in London, Edinburgh, Glasgow, Leeds, Hull, Birmingham, Bristol, and Exeter. Except in London, Dublin, and Edinburgh surgeons combined general practice with their operating work, and there were only one or two men in each capital who would now be called pure consultants. These men made large incomes, but were correspondingly hard-worked. Distances were great; locomotion was slow and difficult. In Canada, Australasia, the Cape, and India there were no great operating surgeons. Anaesthesia had still to come, and the practice of surgery was a sore trial to all but men of iron nerve who had become inured to the scenes in the operating theatre. Abernethy frequently vomited before he entered the theatre to perform a major operation. John Flint South, surgeon to St. Thomas's Hospital, wrote in his diary before he tied the aorta: "I prayed earnestly for help last night, and constantly during the morning, and was most graciously heard." Operations, therefore, were not undertaken lightly, and they were performed as rapidly as was consistent with safety. A perfect knowledge of anatomy was essential. Every hospital surgeon had graduated through the dissecting room, and each considered it necessary to practise dissection as assiduously as Joachim used to practise his violin exercises, saying, "If I do not do them one day I know it myself, and if I do not do them for two days the public does know." It was Astley Cooper's custom, we are told,

> "to rise every morning at six o'clock, even during the winter. As soon as he was dressed he went into his private dissecting room, where he worked till half-past seven or eight. Searle then dressed his hair, and by half-past eight he began to see patients, who came in large numbers, even at this early hour."

The subjects upon which Sir Astley worked were obtained by resurrectionist methods, in which, at any rate in his early days, he had taken an active part. It was this union of the dissection of uninjected bodies in the morning and dirty operations in the afternoon which enabled Lister to say he remembered the time when, after an operation, "One shiver by the patient made the surgeon suspicious; two filled him with alarm, and three was a forerunner of death." The crimes of Burke and Hare in Edinburgh in 1828, and of Bishop and Williams in London three years later, led to the passing of the Anatomy Act in 1832, after which it was possible to obtain a supply of bodies which were less tainted, both physically and morally.

Introduction of Anaesthesia

The age of brilliant surgeons like Astley Cooper, Robert Liston, and James Syme ended with the advent of anaesthesia. The last survivor of the brilliant band of teachers and showy operators was Christopher Heath, who resigned his post of surgeon to University College in 1900. The ligature of large arteries, the removal of tumours from inaccessible places, lithotomy, and the invention of modified forms of amputation had been their delight. Their successors enlarged the sphere of surgery, and found their pleasure in operating upon the abdomen, the head, and the chest—regions which had never been invaded by their masters. They looked to cure their patients where the older surgeons hoped only to save life. By the aid of anaesthesia they could afford to work slowly, deliberately, and with a feeling of security which had been previously unknown. Spencer Wells, Victor Horsley, and Rickman J. Godlee were of this band who owed much to anaesthesia, a great deal to the principles inculcated by Lister, and something to improved nursing and hospital accommodation.

Surgical Pathology

The older surgeons continued the tradition set by John Hunter and the Hunterian school—personal dissection of the human body, and the collection, comparison, and study of pathological processes so far as could be done by naked-eye dissection, injection and the preservation of specimens. Every hospital surgeon had his own museum, the nucleus of which he bought from his predecessor and sold again on his retirement from active practice and teaching. So constant was the custom that it sometimes led to abuse, and at St. Bartholomew's Hospital there was a rule that

> "No surgeon shall form a private museum, but all specimens removed in the hospital shall be the property of the governors of the institution."

The result has been the formation of a collection which is second only to that preserved by the Royal College of Surgeons of England. Benjamin Travers, surgeon to St. Thomas's Hospital, was the last exponent of the system. He tried to build a rational system of surgical pathology upon a philosophic basis. His two books, known to many generations of students as *Travers on Irritation*, were classics in their day, but the science of bacteriology swept away their entire structure. Improvements in the microscope and in the preparation of tissues for histological examination developed surgical pathology along new lines. Speculation gave place once more to experiment and observation. In 1859 Sir James Paget published the lectures on surgical pathology which he had delivered during the years 1847-52. They were inspired by the work of Rathke, Retzius, Schleiden, Schwann, and, above all, by Johannes Müller. They mark a period in English scientific surgery which is not yet ended.

Antisepsis and Bacteriology

The year 1864 may be looked upon as the *annus mirabilis* of modern surgery, for in that year Lister began the campaign which conquered septic disease. Working always by experiment he hardly comprehended at first the principles he was trying to discover. Little was known of ferments, less of micro-organisms. The path gradu-

ally straightened ; bacteriology developed, and the work of Robert Koch in Germany, of Burdon-Sanderson, Emmanuel Klein, Shattock, and Andrewes in this country shed light upon the life and actions of what had been called " germs." Lister's work too often fell upon deaf ears, for it did not at first appeal to the majority of his contemporaries. He was in the end amply rewarded, for he lived to see surgery revolutionized and his practice approved and adopted throughout the world. Working side by side with Lister were surgeons who obtained remarkable results by more simple methods—men like Thomas Keith and Lawson Tait, who had learnt the secret so jealously guarded by the old veterinary surgeon who was implored to disclose the cause of the wonderful success which had always attended his operations. With his last breath he gasped: " I allus boils my instruments."

Surgical Education

Sir Benjamin Brodie did much to advance surgery when he secured, in 1843, a Charter for the Royal College of Surgeons of England, instituting a new class of Members known as Fellows. A well-read and highly cultivated man himself, he said:

" The object of this institution is to ensure the introduction into the profession of a certain number of young men who may be qualified to maintain its scientific character and will be fully equal to its higher duties as hospital surgeons, teachers, and improvers of physiological, pathological, and surgical science afterwards. With this view they are required to undergo a preliminary examination in classics and mathematics ; while their professional education having been continued for a longer period of time they are expected to show that they have a more perfect acquaintance with those sciences which are the foundation of medical and surgical knowledge than can be expected of the great majority of those who are candidates for practice. If this system be properly and honestly carried out I apprehend the result will be that the Fellowship of the College of Surgeons will be the most honourable distinction that is offered to the junior members of the medical profession."

The forecast has been more than justified. The diploma is so highly prized that examiners are now sent to Canada and Australasia to conduct the preliminary examinations in anatomy and physiology, and thus save candidates the expense of a double journey to England. Brodie did equally good work for the profession at large when in 1858, and as the first president of the General Medical Council, he carried out without friction the changes associated with the abolition of apprenticeship and the recognition of English, Scottish, and Irish medical qualifications as being on an equal footing for admission to the *Register*.

Specialism

Nothing is more remarkable in the history of the surgery of the last hundred years than the specialties which have arisen and multiplied. In 1832, and for many years afterwards, a surgeon on the staff of a general hospital felt himself competent to undertake the treatment of every patient requiring manipulative skill. Ophthalmic surgery was no exception, although men like J. Cunningham Saunders, the practical founder of the Eye Hospital at Moorfields in 1804, had done much to raise its status and release it from the hands of the quacks and charlatans who had long held it in bondage. The invention of the ophthalmoscope by Donders in 1851 opened up new paths. Some of the younger assistant surgeons at the general hospitals took advantage of the opportunity and began to specialize—Sir William Bowman first, then George Critchett and Henry Power. The work of Dieffenbach and Stromeyer upon club-foot and other deformities bore good fruit in England by leading William John Little to place orthopaedics on a sound basis. Joseph Toynbee began to specialize in the treatment of diseases of the ear about 1840, and in the same decade a succession of well-educated and far-seeing practitioners raised dentistry from a very subordinate position to the place it now occupies as a branch of surgery. The invention of the laryngoscope by Signor Garcia in 1856 made it possible for Morell Mackenzie and others to open up an entirely new branch of surgery by their operations upon the larynx. The old midwifery of the " man-wives " took on a new lease of life, and the work of Spencer Wells, Lawson Tait, Knowsley Thornton, and Alban Doran developed gynaecology as distinct from obstetrics. The process of specialization continues. Ophthalmic surgery is shared by those who operate upon the eye and those who, with a mathematical bent, undertake the correction of errors of refraction. Those who treat diseases of the ear are now often distinct from those who practise in connexion with the nose. General surgery itself is becoming subdivided as a result of the discovery of x rays and the use of radium. Rectal surgery is also becoming a branch apart, and so we come round to where we were six hundred years ago, when, in 1350, John Arderne gave himself out to be, and was in fact, a very successful proctologist.

But if surgery has become more specialized its practice has also become more general. The village doctor undertook no operative surgery before the introduction of anaesthetics, except such as was immediately necessary in consequence of local accidents and injuries. He bled, amputated, set fractures, reduced dislocations, and opened abscesses, but for anything more serious he sent to the nearest large town for help. The surgeon came to the patient ; transport was slow ; and the local infirmaries and hospitals received patients only under certain arbitrary conditions. An increasing population and the improved status and education of medical men has led to the opening of local hospitals in many of the smaller towns and villages under the name of " cottage hospitals." The first was founded in 1859, and from small beginnings they have now become of considerable size, where much operative surgery is undertaken by the local practitioners under excellent conditions, both of housing and nursing.

War Surgery

The war of 1914-18 revolutionized military and naval surgery as completely as civil surgery had been changed by the adoption of antiseptic methods. The lessons learnt in the Crimean and Boer wars were taken to heart, and under an enlightened and active medical staff the wounded received better and quicker attention than had happened in any previous campaign. On all former occasions the medical arrangements had been severely criticized, but during these years they received unstinted praise.

Nursing

A new tradition in nursing began in England with Florence Nightingale. It started in 1833, when Theodor Fliedner opened a small hospital at Kaiserswerth and developed a system of deaconess nurses. The Anglican Church established an order of Sisters of Mercy in 1848 and the Sisterhood of All Saints in 1851. A training school was founded at St. Thomas's Hospital after the Crimean war in May, 1860. Every general hospital soon had its own school of nursing. A College of Nursing was established in 1916, and in 1925 State examination and State registration came into force. The nursing, like the medical, profession is already showing signs of specialization, and to the surgical nurses the surgeon and surgery owe much.

RAYNAUD'S DISEASE, WITH SPECIAL REFERENCE TO THE NATURE OF THE MALADY *

BY

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Raynaud's disease properly so-called is a condition affecting those parts of the body that are particularly influenced by exposure to cold; it is most usually a symmetrical affection of the hands, less commonly of the feet, and much less commonly of the ears and nose. In the hands, where it is most conspicuously displayed, the affection consists of attacks, usually in response to external cold, in which the skin becomes discoloured and numb. The temperature of the hands of these people is always near to that of the surrounding atmosphere when this is low.

DESCRIPTION OF TYPICAL CASE

In what may be described as typical attacks the events, as recent investigations have shown, are as follows in the hands while at rest. The digital arteries, already constricting in response to cold, become closed, and the circulation to the fingers ceases. This event passes unnoticed by the patient, and because the fingers are cold cyanosis appears very gradually and is usually but slight. When the fingers are in use they may be at this stage either faintly violaceous, or pale from passive emptying of the vessels. The arterial spasm continuing, the small vessels of the skin, which give the skin colour, also enter into actual spasm, and the fingers became completely blanched. This secondary spasm leading to blanching of the skin is not an integral part of the attack, as has been thought, but is a delayed and simple consequence of loss of circulation to the fingers; a similar spasm and blanching occurs in the minute vessels of the skin of the body generally when the circulation ceases and the body cools at death. Another delayed event is numbness of the fingers. Like the waxy pallor of the skin, it is a simple sequence to loss of circulation, the tactile nerves of the fingers losing their function after a period of half to one hour. It is the pallor, or the numbness, or both, which usually first attracts the patient's attention; and these events are usually described by them as forming, though they do not actually constitute, the first events of the attack. As the fingers begin to recover—and in other cases throughout most of the attack—they are of a deep violet tint. When blood begins to circulate again a state of reactive hyperaemia is displayed, and the fingers are bright red in colour and tingle, as during recovery from a long period of local circulatory arrest, however induced. They may or may not become warm. It is notable that in the attack the fingers show discoloration of their tips first of all, the discoloration spreading to their bases and sometimes invading the whole hand. That is so because the digital arteries at first contract to obliteration near their terminations, and the obliterative spasm spreads gradually up the vessels of the finger, subsequently to involve vessels of a corresponding order supplying the skin on the dorsum of the hand.

The attack is here described as careful recent studies have shown it usually to occur; the description differs a little from that originally given by Raynaud.

* Abstract of a lecture given at St. John's Hospital for Diseases of the Skin.

NUTRITIONAL CHANGES IN FINGERS

In patients in whom the attacks are very easily and frequently provoked small areas of necrosis frequently appear at the tips of the fingers; these separate painfully, leaving little scars—a phenomenon that is usually repeated. Massive necrosis is quite unusual. Sclerodactyly is common in the severe cases. The nutritional changes in the fingers are described quite briefly, because they concern us only in so far as they help to identify advanced cases of what is called Raynaud's disease. In the mildest cases the disease consists of vascular changes only and is but an inconvenience. In the severer cases nutrition of the tissues suffers, and the malady becomes very painful, intractable, and crippling.

RAYNAUD'S ORIGINAL THEORY

Raynaud published his thesis in 1862.[1] As is now recognized, he contributed to knowledge by isolating the form of circulatory disturbance that bears his name, and by separating a spasmodic affection of the vessels of the extremities from those due to gross obstructive disease of the arteries. Raynaud, however, also advanced a theory of causation—namely, that the loss of circulation in the affected parts happens through sympathetic nervous impulses and is due to irritability of vasomotor centres. Difficulties have appeared in the way of accepting this theory, which has been held ever since Raynaud put it forward, and recent work[2] has led to the belief that the essential trouble lies, not in the nervous system, but in the vessels of the part showing the disturbance of circulation. It has been proved[2] that, while other vessels may also become narrowed, it is spasm of the small artery of the size of the digital vessels that is responsible for the loss of circulation. The evidence for this last statement will not be given in this lecture, which will confine itself to a statement of the reasons why the vasomotor theory must be abandoned and why the theory of local vascular change must take its place.

EVIDENCE AGAINST RAYNAUD'S THEORY

The first reason for doubting Raynaud's theory was the order in which the vessels are involved. The vascular spasm begins in the tips of the fingers, as we have seen, to spread up the fingers and involve them eventually in their length, and subsequently those of the hand. When vaso-constriction is brought about through the sympathetic nervous system in animals or man, the vessels appear to contract simultaneously in all the territory involved; there is no evidence of an orderly succession—a spread from the periphery to the centre. Recent observations have shown that the vessels of the fingers in Raynaud's disease can be brought to a state of spasm by purely local cooling, and that the digital arteries can be brought into complete spasm quite locally over any short stretch of their course through the finger. The orderly manner in which the finger is involved when a patient is exposed to a cold atmosphere is due merely to the fact that the fingers cool first at their tips and later at their bases.

LOCAL AND CENTRAL ACTION

Now when a subject is exposed to a cold atmosphere the cold affects the vessels of the fingers in two ways. It acts upon them locally, and reflexly through the central nervous system. There are these two actions, and it is quite clear that, when a patient who has Raynaud's disease develops an attack on being exposed to a cold atmosphere, both these factors help to close down the vessels of the fingers. Both factors in similar circum-

stances come into action in normal people and cause arterial constriction; but in these the closure is incomplete. It is necessary for us to ascertain, if we are to understand Raynaud's disease, wherein lies the abnormality. It is not abnormal for digital vessels to contract in response to exposure of the body to a cold atmosphere; but it is abnormal for them to close completely. Theoretically we can place the fault in the nervous system or locally; but we may not assume it to be in both places in one and the same case, or even in two different cases of what we regard as the same disease. We cannot blame the nervous system in any patient unless we can show that in Raynaud's attacks the vasomotor impulses are unusually powerful. Now there is no evidence that this is so; our evidence goes to show that the vasomotor impulses do not constitute the abnormal factor. Consider the usual case of Raynaud's disease in which an attack is regularly and quickly brought on by exposure to a cold atmosphere. If the right hand of such a subject is guarded from cold by immersion in water at 30° C. the exposure of the rest of the body to suitable cold, including the left hand, produces spasm in the vessels of the left hand only. Spasm in the hand kept in water at 30° C. has never been seen; this is a strong argument in favour of the view that the nervous factor is not the abnormal one.

On the other hand, in such a case as has been described, it is almost always possible at a moderately warm room temperature to produce spasm in the vessels of one hand, and sometimes even of one finger, by plunging the corresponding part, and that only, into water at 20° C. or a little less.

Anaesthetization of Ulnar Nerve and Sympathectomy

These observations quite clearly suggest that Raynaud's vasomotor theory is untenable. It is proved to be untenable by observations in which the sympathetic impulses are removed. If a case of Raynaud's disease is chosen in which spasm is easily produced and is intense, then anaesthetization of the mixed nerve (for example, the ulnar) does not relieve the spasm, when this is already present, in the manner in which it undoubtedly would relieve the spasm were this due to abnormal vasomotor impulses. Anaesthetization of the ulnar nerve produces an intense and immediate vaso-dilatation of the fifth finger in normal subjects, even when that finger is cold at the time of anaesthetization. When the finger of a Raynaud's case is cold and its vessels are in spasm, anaesthetization of the nerve either produces no perceptible effect on the vessels, merely reddens the finger without warming it, or warms it after a great delay. This delayed warming is due to a slight relaxation of the spasm owing to removal of normal vaso-constrictor tone. This may be sufficient to warm the finger a little, which will itself cause further relaxation and further warming.

It is quite true that sympathectomy, by which is meant removal of the inferior cervical ganglion, relieves Raynaud's phenomenon on the corresponding side; but, as might be expected from what has been said, it does not cure it.[2 3] In cases in which vascular spasm was originally easy to induce it can again be induced after the hand has been robbed of all sympathetic nerve supply. While these facts actually dispose of the vasomotor theory, it requires careful and precise thought before we can arrive at a proper conception of the disease and the relation of vasomotor impulses to the attacks. A very similar set of circumstances was discussed many years ago in the instance of the action of digitalis in cases of auricular fibrillation. It was found that if the ventricle is slowed by using digitalis it is quickened again by subsequently using atropine. From this it was at first concluded, and incorrectly concluded, that the digitalis slowing results purely from increased vagal tone. The correct conclusion is that quickening under atropine is due, in large part or wholly, to release of the normal vagal tone—the tone present before digitalis is administered. That is the correct conclusion because the release is incomplete; atropine does not bring the rate nearly up to the same level as it does when no digitalis has been administered. When the attacks of vascular spasm in Raynaud's disease are relieved by sympathectomy the relief is also incomplete; it is due, not to removal of abnormal vasomotor impulses, but to removal of normal ones. Such relief as is seen is precisely what is to be expected if we hold—what I have no doubt is the correct view—that a local fault and not increased vasomotor tone is responsible for the disease.

Structural Changes in Arteries

When there is general exposure of the normal body to a cold atmosphere there is, as has been said, a double reaction: there is the direct response of the vessels of the fingers to cold, and there is a response through the central nervous system. In normal subjects these two influences together combine to produce great narrowing of the vessels of the fingers; the narrowing is so great that only a very sluggish stream of blood passes through them. Different normal subjects vary in the degree to which the vessels narrow, and the transition from normal subjects to those in whom the obstruction becomes complete—and that are properly called cases of Raynaud's disease—is not abrupt; it is quite gradual. A great many subjects whom we regard as normal narrowly escape the malady.

It is here to be pointed out that the local fault may be theoretically of either one of two kinds. It may be due to structural change in the arteries involved, or it may be due to these vessels reacting more powerfully to such a local stimulus as cold. There is evidence for believing that in the patients who present spasm that is easily induced the vessels are often actually abnormal structurally. They will not open up as widely as will normal vessels in response to heat, for example; and such anatomical evidence as we possess, though admittedly meagre, points to the presence of intimal thickening. If exposure of the body of a normal subject to a cold atmosphere produces an increase in the tone of the digital vessel almost sufficient to close its lumen, it is easy to understand that the presence of even a little intimal thickening might make just the difference between incomplete and complete closure. It is going to be a very difficult matter to separate this factor of intimal thickening from the factor of increased response to local stimuli, and to assess the relative parts played by the structural and functional element in bringing the vessel to complete obliteration in individual cases—though there is reason to believe that each factor may play its part. Given that the two factors are present, there remains another problem. The intimal thickening may be regarded as consecutive to the spasm and to diminished blood flow; or, on the other hand, early structural change in the vessel may be regarded as responsible for, or associated with, change in the reactivity of this vessel to local stimuli. These are questions of much theoretical interest, but not for the moment of practical importance.

Raynaud's Disease a Local Affection of the Arteries

The important matter at the moment is to recognize that, whatever views we take of these questions, we are still left with the conclusion that Raynaud's disease is

a local affection of the arteries, and is not caused by a disturbance of the vasomotor nervous system. That is a conclusion which sooner or later must influence our management of these cases.

A curious affection appearing in recent years amongst workers with tools or machines that vibrate is of much interest to this discussion.[4] It occurs in a number of different trades, but may be illustrated by stone-masons who use a chisel driven by compressed air. These workers develop a condition in the fingers indistinguishable from Raynaud's disease; the circulation to them is lost on ordinary exposure to cold. But what is most noteworthy is that the fingers most exposed to the vibration are those that develop this abnormality first. The example is cited as an instance of Raynaud's malady arising locally and asymmetrically out of an obvious local cause.

We may safely conclude that in Raynaud's disease the fault is purely a local one and that vasomotor tone is normal during the attack. But to explain the many interesting reactions of these patients we may not neglect the factor of vasomotor tone.

ILLUSTRATIVE REACTIONS EXPLAINED BY NEW THEORY

Perhaps a clear understanding of what is in fact not a very simple matter may be aided by citing a series of examples briefly illustrating the many reactions that may take place in different circumstances that can be defined, and by showing that all these reactions are readily explained if we assume that the fault is local and the vasomotor system normal. This view of the pathology of the disease is adequate, and it is alone adequate, in interpreting the examples given. The following instances all apply to the susceptible fingers of a case of Raynaud's malady.

1. The first example is the most familiar; it is that of the usual spontaneous attack. An attack develops on simple exposure to a room temperature of 15° C. It is in part due to increase in vasomotor tone, and in part to a local response to cold. The abnormality, however, is a local abnormality, and may consist of increased susceptibility of the vessels to cold or a facilitation of closure owing to local intimal thickening.

2. The subject's body and hands are warm in a warm room (22° C.). Vasomotor tone is equal and apparently normal, and remains so in the two hands. One hand is now placed in water at 20° C.; in this, and in this only, an attack develops. Such an attack is to be ascribed to a local fault.

3. The subject while warm is taken into a cold room (15° C.) and exposed with the right hand in water at 30° C. An attack develops in the left hand only. In this instance, although vasomotor tone is raised in both hands in response to the cooling of the body, the hand that is protected from local cold is prevented from developing an attack. The increased vasomotor tone is not abnormal, and therefore fails by itself to close the vessels.

4. The subject is exposed in a cool room and the hands are protected, being kept at a temperature (about 25° C.) that is just insufficiently low to close the vessels and to induce an attack. The subject now experiences an emotional disturbance or pain; there is a rise of vasomotor tone and an attack supervenes. In this case the vessels are already abnormally narrowed, though not occluded, and an increase of vasomotor tone (a normal increase) is now sufficient, acting on these abnormally narrowed vessels, to complete the closure.

5. It is quite possible that a normal vasomotor impulse might close a digital vessel that is at a higher temperature (say 30° C.) if that digital vessel had much intimal thickening. Here again, though an increase of vasomotor tone might be the only apparent factor, the structural alteration of the vessel would be the real cause of the attack, because it alone would be abnormal.

6. A patient is presenting an attack in a cool room, and anaesthetization of the ulnar nerve fails to abolish it. In this case removal of normal vasomotor tone is insufficient to release spasm in vessels that are closed owing to a local abnormality.

7. A patient who has lost the sympathetic nerve supply to one arm dips both hands into water at 20° C. while in a cool room. An attack develops in both hands, but is more severe on the non-sympathectomized side. In this instance both hands present an abnormal local response to cold, but on the sympathectomized side this response is counteracted to a slight extent by loss of normal sympathetic tone. If the malady is less severe the loss of sympathetic supply (by sympathectomy) on one side may even suffice to prevent the attack developing in that hand, and ulnar anaesthesia may likewise prevent the corresponding (anaesthetized) finger from becoming cyanotic. But these facts are compatible with the theory of local causation and form quite inconclusive arguments for the vasomotor view.

8. If the body of a patient upon whom cervical sympathectomy has long since been performed on one side is kept very warm while the two hands are cooled by immersion in cold water, then the attack may be confined to the sympathectomized side.[5] This apparent paradox is due to the fact that after sympathectomy full vasodilatation is not maintained; and so, when there is a conspicuous vaso-dilatation, as from heating the body, the vessels on the intact side become wider than those on the sympathectomized side. It leads curiously to the attack, which is clearly the result of a local cause, being *confined* to the limb from which the sympathetic nerves have been removed.

REFERENCES

[1] Raynaud: *L'Asphyxie locale*, etc., Paris, 1862.
[2] Lewis: *Heart*, 1929–31, xv, 7.
[3] Lewis and Landis: Ibid., 1929–31, xv, 329.
[4] Papers by Hamilton and by Seyring in *Arch. f. Gewebepathologie und Gewerbehygiene*, 1930, i, 348, 359; and personal unpublished observations.
[5] Lewis and Pickering: *Heart*, 1931, xvi, 33.

A CONSIDERATION OF BACKACHE FROM THE ORTHOPAEDIC STANDPOINT*

BY

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When a patient complains of low back pain, with or without sciatica, an eliminative diagnosis leaves us with a group of conditions which may be definitely regarded as orthopaedic in nature, the source of the difficulty lying usually in the lumbo-sacral or sacro-iliac joints. One is able to say this when physical examination reveals localized joint tenderness, muscle spasm, stiffness, and deformity referable to one or other of these articulations. In affections of the more superficial joints these features are readily discernible, but in the low back the joints are deeply seated, and a superficial examination entirely fails to bring out the salient points on which a diagnosis based upon anatomical facts and a knowledge of the statics of the body can be made.

This whole field has been a mysterious one in the past, but owing to the efforts of the Boston school of orthopaedic surgeons, headed by Dr. Joel Goldthwait, a step-by-step method of physical examination and the interpretation to be built up upon the facts elicited has

* Paper read at a clinical meeting of the Fife Branch of the British Medical Association, April 14th, 1932.

been painstakingly formulated. So accurate can this examination be in eliciting the facts from which a diagnosis may be made that one can confidently claim that cases of low back pain and sciatica are capable of quite definite scientific analysis at the present time. To make our diagnosis more accurate we need anatomical knowledge of the statics involved, and, above all, a systematic physical examination. The clinical picture is the most valuable single aid in disproving or confirming the diagnosis made by history and examination. The group includes the numerous cases of back strain and injury.

POINTS IN AETIOLOGY AND DIAGNOSIS

These cases are full of interest and importance because of their frequency, the lack of diagnosis, and the difficulty of disproving the assertion of pain. On examining a case of low back pain and sciatica from the orthopaedic point of view it is necessary to bear in mind the following points.

1. The anatomical type of the individual concerned. The slender, small, and delicate type of individual is unsuited for heavy labour, and breaks down easily under the strain of hard work. There is a true inherent weakness in this class of individual.

2. An analysis of any series of painful backs urges a consideration of the practically universal occurrence of bad bodily mechanics. These patients usually have a lordotic spine and a forwardly-tilted pelvis. A chronic lumbo-sacral strain may thus become established from the body weight being carried through the spinal arch instead of through the spinal body. Such a position predisposes to injury of the lumbo-sacral joints by sudden hyperextension force. In certain cases only the muscles and aponeuroses are involved. In these cases, the pelvis being tilted forward to a greater degree than is normal, the sacro-iliac joints derive less support from the shape of the bones. The muscular support of the pelvis becomes incompetent, and a chronic or acute sprain of the sacro-iliac joint may be predisposed to in these circumstances.

3. The *x*-ray examination is of first importance. A negative radiograph is not of sufficient significance to warrant the assumption that there is nothing the matter with the patient. Of far greater importance is a thorough physical examination. In many cases very careful *x*-ray examination will reveal to the trained eye slight departures from the normal structure which are of significance and indicative of strain. On the other hand, when a patient alleges trauma as the cause of his disability, the radiograph may reveal a pre-existing intrinsic lesion of the spine, such as osteo-arthritis, healed Pott's disease, or an old compression fracture. Much argument develops round the medico-legal claims of these cases. The employer claims that the accident cannot be held responsible for the symptoms ; the man claims that it is the injury which has deprived him of his power to earn his living.

4. The difficult and complex question of anatomical variations in the lumbo-sacro-iliac region in relation to low back pain and alleged injuries to the back has next to be considered. The commonest variation is an enlargement of the fifth lumbar transverse process. When it becomes semi-sacralized it assumes a fish-tail shape, and sometimes forms an accessory articulation with the sacrum and ilium. Such abnormalities are to be regarded as potentially contributory in setting up low back pain and sciatica. It is unquestionable that the association of the occurrence and persistence of symptoms and the presence of these abnormalities is an intimate one.

5. From my experience of these cases I do not regard many of them as being malingerers in the true sense of the word. The man who has suffered an acute traumatic strain of the back, if treated early and completely, can, in the majority of cases, be returned to his work without getting into the chronic stage of the compensation case. Adequate facilities for such treatment is, in my opinion, urgently required at big works and mines, together with the exercise of authority by the doctor in insisting that the man return to work when he is told to do so.

TREATMENT

A useful clinical classification of low back pain is as follows: (1) Acute traumatic strain. (2) General postural strain. (3) Lumbo-sacral strain. (4) Sacro-iliac strain. (5) Combined pelvic-joint strain.

In conditions of acute traumatic strain there is usually a tear of muscle or aponeuroses. Treatment of a torn muscle must consist of rest until healing has taken place. Most of these patients with industrial back accidents are allowed to use the muscles too soon and with insufficient protection. If there is a superadded infective focus in the body, this may be a factor in keeping up the painful muscle spasm which tends to persist. Such fixation is crippling, and manipulation under an anaesthetic offers the best chance of cure. To secure the required rest the patient should be made recumbent on a firm mattress and have the back splinted with straps of broad adhesive strapping placed transversely across it. The knees are supported on a pillow. In severe cases a plaster-of-Paris jacket should be employed, or recumbency in a plaster shell. Heat in the form of hot fomentations, massage, and exercises are begun almost immediately, and the average case should be allowed up in about three weeks.

In general postural strain the condition is one of general muscular fatigue, and ligamentous strain not confined to one joint. The patient is usually of the asthenic type. Such cases require nutritional and supportive treatment by rest, massage, postural remedial exercises, and support by a brace and corset.

In lumbo-sacral strain the pain is localized in an indefinite way over the low spine and hip. The pain is usually asymmetrical, and sciatica is a frequent symptom. This kind of backache is generally relieved by rest. The lumbar and lumbo-sacral movements are markedly limited, and there is localized tenderness on deep pressure over the lumbo-sacral articulations. This point may be best made out by examining with the patient kneeling on his hands and knees. Treatment is very largely similar to that already mentioned for acute traumatic strain. One important exercise is to teach the patient to flatten the lumbar spine, and a brace is employed to span the lumbar curve and to help the muscles to maintain its position.

In contrast to lumbo-sacral strain, which usually affects one side and is relieved by recumbency, sacro-iliac strain is commonest in the slender, visceroptotic types who use the body in poor posture. Tenderness is referred to the joint on its posterior and inferior aspects. There is hamstring spasm when the patient bends forward. Treatment of the condition is as under the previous section.

When these methods are unsuccessful, and in the more acute cases, the patient must have the joint manipulated under an anaesthetic. The assistant fixes the pelvis and opposite limb. The surgeon then flexes the affected hip with the knee straight to the right-angled position, and pushes directly downwards.

Lumbo-sacral and sacro-iliac strain may occur together owing to the faulty mechanics to which a large lumbo-sacral transverse articulation can give rise. In very severe cases of painful semi-sacralization a fusion operation to fix the lumbo-sacral region by means of a bone graft may be indicated. Prolonged fixation, however, for several months in a complete plaster spica casing has succeeded in curing a large proportion of the cases.

PLEURAL EFFUSIONS

OBSERVATIONS ON THE PRESENT POSITION OF TREATMENT

BY

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Pleural effusions are very frequent in every kind of medical practice. By this very frequency they are important, because they must be treated by all types of physicians—tuberculosis experts, hospital physicians, and general practitioners of every degree of experience and skill. They must be treated in every kind of surroundings, from sanatoriums at one end of the scale to the patient's own room at the other. It would be well, therefore, to examine the position of treatment as currently taught and practised, to see if the best possible is being done for the large number of patients presenting this condition.

SEROUS EFFUSIONS

I propose to consider these in detail. They are potentially dangerous or are harmless. The treatment currently taught and practised is either satisfactory or leaves something to be desired. In the latter event it will be necessary to seek where the deficiency lies, and to see what measures can be proposed to improve it.

To examine the case in this manner will inevitably introduce much that is agreed and well known, but for the sake of clearness it is better to consider everything from the beginning, and to develop the argument on the assumption that no prior knowledge exists.

THEIR DANGERS

Are serous effusions dangerous? If one excludes effusions of cardiac, renal, or malignant origin, one can start with the statement that almost all pleurisies are tuberculous, and that every effusion that begins insidiously and progresses to a large chest full of fluid is almost certainly so. It is not easy to obtain references to the after-histories of these cases, but Burrell[1] states that 40 per cent. of them develop pulmonary tuberculosis. The records of the large American insurance companies, quoted by Norris and Landis,[2] show that the death rate from tuberculosis of the lungs among persons who have had pleurisy within five years prior to insurance is three times the average rate for individuals without such a history. These authors, viewing the matter from another standpoint, publish four series of statistics showing the percentage rate of antecedent pleurisy in groups of cases of pulmonary tuberculosis. Their four groups total 9,362 cases, of whom 2,937, or 31.3 per cent., had had pleurisy before the manifest development of their pulmonary lesions. In these statistics fibrinous pleurisy is not separated from effusion, which, in general, is the more serious manifestation. It should be remembered that the pleura is invaded from the lung, and that the disease, active or not, already exists in the pulmonary tissue when a pleural effusion has formed. I believe that these figures and considerations prove that, in dealing with a pleural effusion, one is dealing with a serious condition, and that anything that will lessen the risk of subsequent active pulmonary tuberculosis is a matter of fundamental importance.

TREATMENT

In a fibrinous pleurisy, or in a case with a small effusion, it is usually sufficient to keep the patient in bed until the temperature settles and the fluid is absorbed and then send him to a sanatorium or adopt sanatorium regime for several months in his own house. When an effusion becomes so large that it embarrasses the heart, when the temperature will not come down, when dyspnoea or severe pain is present, or when, after three or four weeks, no sign of absorption has occurred, it will be necessary to interfere actively with the effusion, to reduce the temperature, to prevent toxic absorption, and to limit the tendency to fibrosis of the lung from organization of the effusion spreading into it.

INADEQUACY OF CURRENT TEACHING

To determine what steps are recommended to students and practitioners for carrying out this interference, I consulted all the best-known English and American textbooks of medicine published in the last few years. All advise aspiration of the fluid in terms of which two examples are typical:

1. The fluid must be withdrawn slowly. The amount will depend on the quantity present, but it is safer not to exceed 1,500 c.cm. Pain occurs after a certain amount of fluid is withdrawn. It is sharp and cutting; coughing occurs later, and may be severe and paroxysmal. Faintness is common, and sudden death has been recorded. Pneumothorax of slight extent often follows an exploratory puncture or aspiration.
2. Aspiration should be stopped if cough becomes troublesome, if pain is severe, or if albuminous expectoration with signs of oedema supervenes. In rare cases sudden death from pleural shock has occurred. Other risks are due to faulty technique, and comprise entrance of air into the pleural cavity from wrong connexion of the apparatus or from wounding the lung.

Of the many whom I consulted, only one author mentions what must be in the experience of everyone who has dealt with these cases—namely, that the aspiration of the fluid may precipitate the spread of an acute pulmonary tuberculosis, leading to a fatal issue in a few months. On the other hand, as the quoted examples show, all the writers stress the much rarer accidents that occasionally follow attempts at too complete evacuation of the chest, with consequent production of a high negative pressure. On this account they all recommend partial aspiration up to an average limit of 1,500 c.cm., but none of them mention the probability of basal adhesions, permanent fibrosis, and impaired expansion following the slow absorption of residual fluid standing for long periods in the base. Some authors suggest that the fluid may be replaced by oxygen, and one by oxygen and air, but none, with the exception of those contributing to the more advanced and specialist type of textbook that does not come the way of the student or general practitioner, give any further details. Indeed, they all class a pneumothorax amongst the possible accidents of a badly conducted aspiration.

It would emerge from a consideration of the foregoing that current practice is far from satisfactory, and that the ideal method of treatment should satisfy these conditions:

1. It should cause no danger or distress to the patient.
2. It should ensure as far as possible against the spread of pulmonary disease.
3. It should aim at total emptying of the chest—to prevent basal fibrosis.

GAS REPLACEMENT

Now there is a method which does answer these requirements. This ideal method—gas replacement—is not new, having been used by R. W. Parker[3] in 1882 for the treatment of empyema, and a few years later by Potain[4] in the treatment of an effusion complicating a spontaneous pneumothorax. Later, Vaquez and Achard applied it to serous pleural effusions. In recent years it has been employed regularly by most of those interested in pulmonary conditions, and has been strongly urged in several papers by Burrell[5] and others for some years past. In spite of this the procedure, as we have seen, has not made much headway as a routine procedure among physicians, and is contemptuously dismissed in current textbooks intended for students and practitioners. It may be objected that it takes a long time for new methods to

appear in books, and that the actual practice, at least in teaching hospitals, is in advance of current textbook advice. I do not believe this, but feel certain that the contrary is the case, and that most pleural effusions, when interfered with at all, are simply tapped by house-physicians who in many cases measure success by the quantity of fluid obtained.

The reason for this is twofold: (1) the usual technique is moderately difficult; and (2) the dreadful shock involved by the sudden expansion of the collapsed lung and the shifting of the mediastinum is not appreciated, in spite of occasional fatalities, many accidents, and frequent pain and distress. This lack of appreciation follows from the fact that attention has been directed to the effusion itself, and the state of the lung within the fluid has been quite neglected and is not visualized by the physician. This also applies to the displacement of the mediastinum.

Again, the size of the chest is never considered, either in relation to the volume of fluid that may be withdrawn or the degree of pulmonary collapse that will be produced by a given volume of fluid in chests of different capacities.

Fig. 2 shows a large chest from which 2.7 litres were removed and replaced by 1.6 litres of oxygen, the pressure being negative. Fig. 1 shows a small chest from which 1 litre was removed and replaced by 750 c.cm. air, the pressure being positive.

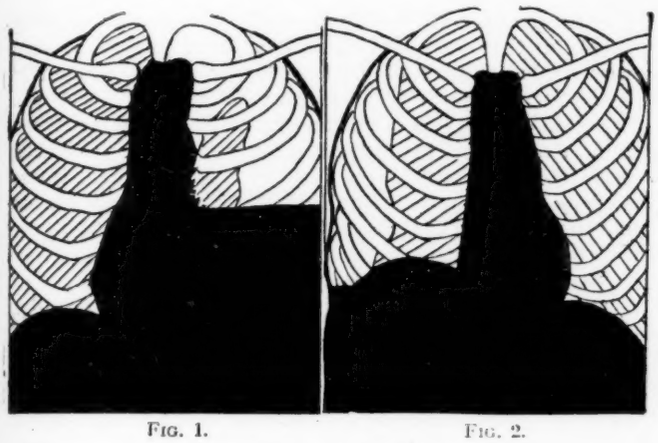

FIG. 1. FIG. 2.

FIG. 1.—T., 1,000 c.cm. fluid removed, 750 c.cm. air replaced. Pressure + 4 + 2.
FIG. 2.—T. C., 2,710 c.cm. fluid removed, 1,655 c.cm. oxygen replaced. Pressure − 6 − 2.

Now it is obvious that very different effects would have been produced in these cases by simple aspiration of 1.5 litres, without replacement, as permitted in the directions of all the quoted textbooks. Slight disturbance would have resulted in the second case, but it requires little imagination to realize what would have happened in the first chest. The shrunken collapsed lung would suddenly have been dragged open by a great negative pressure, the mediastinum would have been violently displaced towards the side of the vacuum, the patient would have suffered immediate shock, great pain and distress, and perhaps collapse. Any tuberculous focus in the lung would have been ruthlessly torn open and the disease spread far and wide by aspiration. The presence of the replacing gas prevents the re-expansion of the lung (which occurs slowly as it is absorbed) and allows time for the healing of a pulmonary focus and for watching the pulse and temperature, so that a permanent pneumothorax may be maintained if the disease is found to be active in the lung. Oxygen is recommended if immediate re-expansion is desirable, but it seems to me that the longer period of rest, following the slower absorption of air, is a distinct advantage.

DIFFICULTIES OF TECHNIQUE

I propose to consider now the difficulties of technique. The usual procedure recommended is that an aspirating trocar is introduced at the base of the effusion, and an induction trocar, in connexion with a pneumothorax apparatus, is put into the upper part of the chest and the fluid removed as the air is run in. This is equivalent to inducing a pneumothorax plus aspiration. It is always a matter of some little trouble to induce a pneumothorax for the first time, and even in expert hands it is occasionally quite difficult. A refill into an existing air cavity is, however, always a simple matter. A further difficulty in a completely full chest is that the pneumothorax trocar and tubing may immediately fill with fluid. As this fluid must be returned to the chest it is essential that the whole tubing be sterilized and dried before use on each occasion. This latter is a time-consuming and difficult process. Furthermore, the fluid in the trocar and tubing is almost certain to produce bubbles and water-locks, which interfere with the manometer readings. Lastly, the procedure, which can never be single-handed, involves the use of apparatus with which many physicians are not familiar.

METHOD ADVOCATED

To overcome these difficulties I have improvised an equipment, the basis of which is the well-known rotanda

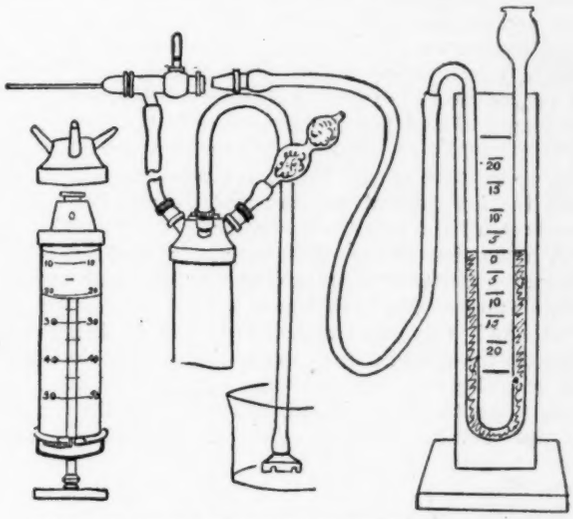

FIG. 3.—Rotanda syringe showing connexions with patient, air filters, and fluid receiver. The manometer ready to be plugged in.

syringe for blood transfusion. This syringe, manufactured by Messrs. Haselmeier of Stuttgart (and obtainable from Fannin and Co., 41, Grafton Street, Dublin), consists of a graduated 50 or 100 c.cm. barrel with one outlet, which rotates inside a metal head with three ports (Fig. 3). The syringe can be put into communication with any one of these by merely rotating the barrel. It is thus possible to have a connexion with the chest, with a receiving receptacle, and with an air or oxygen container. A water manometer needle and tubing completes the apparatus, which can be used single-handed, and which turns the difficulty of the induction of the pneumothorax into a simple matter.

The working of the apparatus is familiar to everyone who has ever handled a syringe. With a very fine needle a few minims of local anaesthetic are injected under the skin in the posterior axillary line. The needle is then pushed in one to one and a half inches, and 1 c.cm. of anaesthetic is injected. It is then withdrawn half-way, and left *in situ* to mark the anaesthetic track. After waiting five to ten minutes to allow the pleura to become fully anaesthetized, the trocar is inserted and the fluid aspirated and ejected. Each 50 c.cm. of fluid is replaced by 45 c.cm. of air, which is drawn through sterile gauze

filters and slowly injected into the thorax. (As the air expands when heated to body temperature by 10 per cent. of its volume, 45 c.cm. are used to replace 50 c.cm.) When this has been done a few times the presence of a gas bubble can be made out by percussion in the upper part of the chest anteriorly. The skin and pleura are again anaesthetized over this, and a trocar connected with a water manometer is passed into it. The presence of the gas bubble prevents injury to the lung, and, as a rule, makes the entry no more difficult than a simple refill. The pressure is read and aspiration and air filling continued as before, until the chest is dry, keeping the pressure in the manometer at a constant figure.

It will be found that much less air than fluid is required to maintain this pressure, because of the expansion of the gas and the rising of the diaphragm when it is freed from the weight of the fluid. For this reason also it is not desirable to insert the aspirating trocar too low in the pleural sac, as the ascending diaphragm may obstruct it. The difficulties are few. A " dry tap " may occasionally be met with. This results from entering a band of adhesion or organizing tissue in the base. These are comparatively common in effusions that have stood for a long time. Pleural shock is prevented by careful anaesthetizing, and all pain, discomfort, and distress by replacing the fluid by gas as it is removed. There is no danger from cough, faintness, or oedema of the lung. Gas embolism is prevented by careful preliminary aspiration and the avoidance of a high positive pressure in the thorax.

This method entails the insertion of a second needle in the upper part of the chest, the advantage of which is that the intrapleural pressure may be watched and kept constant all through the operation.

A much simpler procedure may be carried out with one aspirating trocar only, replacing the fluid with two-thirds of its volume of air. When the chest is quite empty of fluid, and only the replacement air is being sucked through the syringe, the latter is half rotated—which seals off the chest—whilst a manometer is connected by a simple adapter to the end of the trocar, and the tap turned to put it into communication with the pleural cavity. The pressure is read, and if positive is adjusted by slow removal of air until a pressure between 0 and − 4 is obtained. This method reduces gas replacement to its simplest term. It is entirely a single-handed procedure, and is within the capabilities of everyone who can use a syringe and has the minimum degree of manual dexterity.

If for any purpose it is desirable to employ oxygen, a rubber bag containing the gas can be attached to the air filter.

PURULENT EFFUSIONS

Tuberculous purulent effusions may be treated by gas replacement, oleothorax or gelatinothorax, or early thoracoplasty.

The rotanda syringe method is ideal for making an oleothorax. The chest is emptied of pus, which is replaced by oxygen ; with the patient lying on the sound side the procedure is reversed. The oxygen is aspirated and the oil slowly injected.

Lastly, in certain cases of pneumococcal or streptococcal empyemas, total aspiration and oxygen replacement offers a very simple and adequate treatment. In these cases oxygen is used to promote expansion of the lung by its more rapid absorption, and a negative pressure as high as can be comfortably borne is maintained for the same purpose. The absence of any external opening is an immense advantage. Finally, the chest may be washed out and an effusion thinned by repeatedly pumping in and out Dakin's solution or any other antiseptic fluid.

CONCLUSIONS

1. Pleural effusions are essentially dangerous.
2. Current treatment adds to, rather than diminishes, these dangers.
3. A really satisfactory method of treatment does exist.
4. It has failed to achieve popularity through wrong approach to the problem and through difficulties of technique.
5. A method of overcoming these difficulties is described.

REFERENCES

[1] Burrell, L. S. T.: *Modern Technique in Treatment*, vol. iv, p. 208; *British Medical Journal*, April 11th, 1931, p. 620.
[2] Norris and Landis: *Diseases of the Chest*, fourth edition, p. 646.
[3] Parker, R. W.: *Lancet*, 1882, i, 689.
[4] Potain: *Bull. de l'Académie de Méd.*, 1888, Second Series, xix, 537.
[5] Burrell, L. S. T.: *British Medical Journal*, loc. cit.; *Recent Advances in Pulmonary Tuberculosis*, Churchill, 1929, p. 70.

THE MEAN TEMPERATURE OF HEALTHY GIRLS

BY

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In the *Journal* of May 28th, 1932, Lyon and Wallace[1] point out that the temperature of afebrile hospital patients as recorded night and morning is slightly more than 1° below the " normal " temperature reading (98.4° F.). They state that " it is not unreasonable to assume, therefore, that if the temperature of a recumbent individual suddenly rises from 97° to 98.4° F. that individual is also slightly febrile, despite the fact that the temperature has not risen above the conventional limit."

DETAILS OF INVESTIGATION

The following observations, made in a large boarding school for girls, suggest that these conclusions are also true of healthy girls engaged in active life.

The information which I have to submit was obtained exclusively from records of girls of from 14 to 17 years of age. This limitation must be made perfectly clear because it may be injudicious to assume that the results are applicable to persons of different age or of the opposite sex. It is known, for example, that the temperature and pulse of younger children are less stable than those of older children, and it is possible that girls of 14 to 17 may differ in some degree from adults or from boys.

It is commonly assumed, for example, that the temperature of convalescents is usually subnormal. In the majority of cases, however, the convalescent reading is of the same order as that found in health as illustrated in Charts 1 and 2.

In both, the convalescent temperature is almost uniformly below 98°, and might therefore be considered subnormal but for the fact that it differs in no way from the reading obtained from the same individuals in health.

In particular, the so-called normal temperature (98.4° F. or, according to some authors, 98.6° F.) is so rare that, in my experience, its occurrence in adolescent girls always warrants a strong suspicion of ill-health.

On three occasions, for a continuous period of about a fortnight, a record was kept of the morning and evening temperatures of a group of healthy girls leading an active school life. The temperatures were all taken orally with thermometers certified by the National Physical Laboratory. Two precautions were observed throughout—namely, that the records should not be taken (*a*) within half an hour after meals, or (*b*) within an hour of participation in an active game. Altogether 108 girls were

observed morning and evening, and 3,655 temperature readings were recorded.

0.06 per cent. of these reached 99° F. or over.
6.6 per cent. were between 98.4° and 99° F.
17.9 per cent. were between 98° and 98.4° F.
39.8 per cent. were between 97° and 98° F.
34.9 per cent. were below 97° F.

That is to say, only one-quarter of the readings were above 98° F., and no less than 75 per cent. of the readings obtained were "subnormal" according to the standard just quoted.

Convalescence and Health

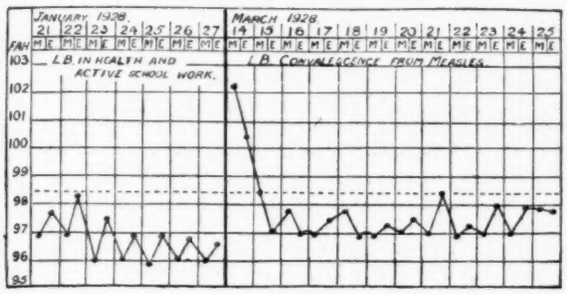

CHART 1

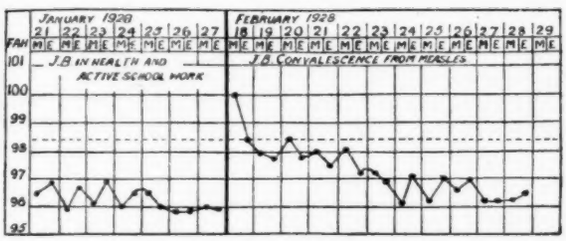

CHART 2

ANALYSIS OF RESULTS

There are reasons for assuming that even these results do not place the normal or ruling temperature sufficiently low.

1. In the first group of girls examined (2,177 observations upon sixty-one girls) the records above 98° F. were about 10 per cent. more frequent than in the two later groups. At the time when these first observations were made there was a week of unusually heavy frost. In the evenings, on returning from games or skating, there was a strong inducement for the girls to congregate round hot fires in warm rooms. That this resulted in some increase in the general level of the temperatures recorded seems probable from the fact that on the coldest night of all more than half of the girls in one house were reported to me as showing temperatures of 98.4° F. or over. On inquiry they all admitted that they had been sitting round the fire in a very hot room. This source of probable error was avoided in the later series.

Result of Transient Disturbance

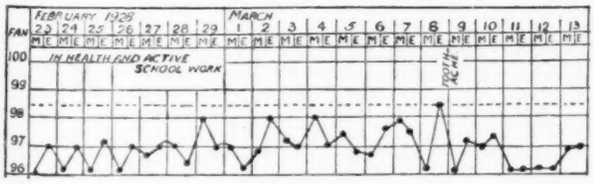

CHART 3

2. It is probable that many of the occasional readings of 98.4° F. or over were due to some transient disturbance of health, as is instanced by Chart 3.

3. A few individuals have an habitually high level of temperature. Chart 4 is taken from a girl in the first group who showed the highest average in this respect.

Persistent High Level

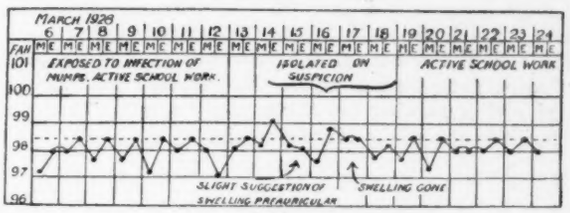

CHART 4

But even in her case it is evident that 98.4° was reached in less than half of the readings. Such an individual record raises the average.

Chart 5 is the record of the captain of games, whose activity is undoubted.

Active Type

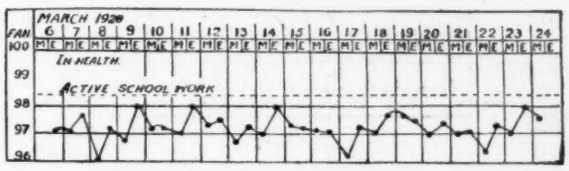

CHART 5

The following conclusions may, I think, be safely drawn from these figures:

1. The normal (or ruling) temperature of girls of from 14 to 17 years of age is nearer 97.4° than 98.4°.

2. Girls in whom the mean approximates to 98.4° are very rare.

3. A temperature of 98.4° in the mouth is so suggestive of illness that it should not be disregarded unless no other disturbance of health can be detected.

CLINICAL APPLICATION IN EXANTHEMATA

The clinical importance of these conclusions from the point of view of the early detection and prevention of the exanthemata and other infective diseases is undoubted, because, in most of these diseases, a departure from the patient's usual range of temperature can be detected before characteristic symptoms appear, and, what is of greater moment, before the patient has become infectious to others. This is well illustrated in measles. It is known

Measles

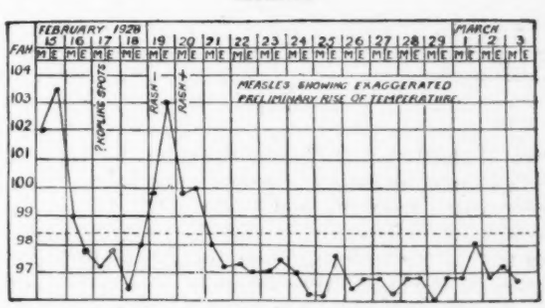

CHART 6

that in most cases of measles there is a preliminary rise of temperature four or five days before the full development of the disease, and that this brief rise is often succeeded by a period of twenty-four to forty-eight hours during which no febrile disturbance is evident (Chart 6).

Claud Ker makes the following statement in this connexion: "It may be noted that occasionally there is practically no pyrexia in the invasion stage, although *sometimes* the axillary temperature of a child, hitherto steadily subnormal, may give useful warning by rising to the normal level." I can fully corroborate this, but I believe I am justified in taking the matter further, and in saying that if the temperature is recorded throughout the incubation period a rise above the patient's previous level will give this warning *in almost every case.* Charts 7, 8, and 9 illustrate this preliminary rise.

Preliminary Rise in Measles

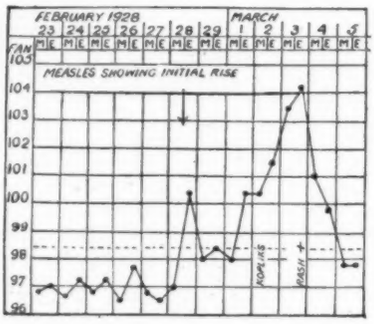

CHART 7

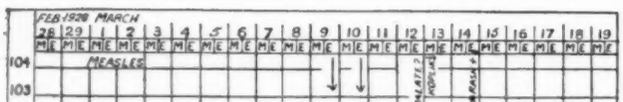

CHART 8

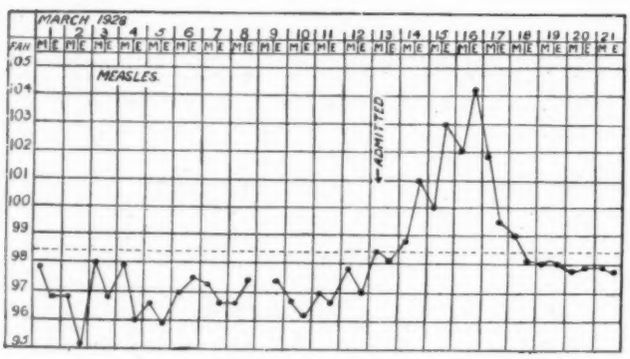

CHART 9

In two of them the rise is obviously febrile, while in the third its pathological significance only becomes evident by comparison with the previous readings.

In view of the fact that the textbook teaching considers 98° to 99° a normal temperature, and that manufacturers of charts and thermometers stereotype the figure 98.4° as normal, I find it difficult to convince everyone that such a temperature warrants isolation of a susceptible measles contact. In a recent outbreak, measles escaped from control for this very reason, and eighty cases resulted.

Two of the offending charts are reproduced (Charts 10 and 11).

Typical Charts in an Outbreak

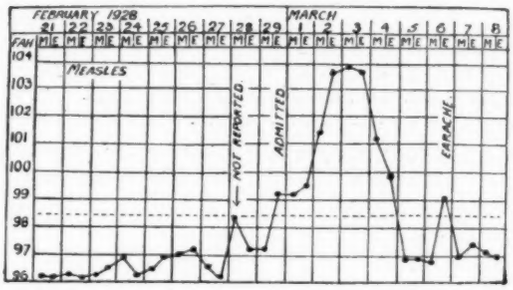

CHART 10

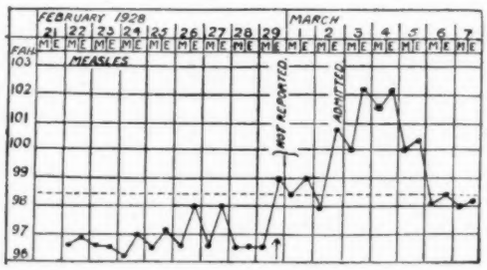

CHART 11

Once it is realized that the traditional figure of 98.4° F. is misleading, and that this preliminary rise can be detected by comparison with the previous temperature, an important step is taken in the prevention of measles—one of the most anxious and dangerous diseases when it occurs in the form of an uncontrolled epidemic.

The following example illustrates the advantage of this interpretation of the temperature chart. In the spring of 1924 forty girls were isolated during the first fortnight of the term (the period during which exanthemata which have been contracted during the holidays developed) because of a rise of temperature to 98.4° F. Ten or fifteen of these were in every respect normal on the following day and were permitted to return to school. Twenty were found to be suffering from feverish colds and were kept out of school until well. Four developed measles. There were thus four potential sources of an epidemic. *But as a result of the prompt isolation secured by the reporting of temperatures of* 98.4° F. *no other case of the disease appeared during the term.*

These results demonstrate the frequent pathological significance of a temperature of 98.4° F. in the mouth and the serious consequences which may follow from the belief that temperatures between 98° and 99° are normal or that a temperature of 98.4° is evidence of health and may be disregarded.

CONCLUSIONS

1. A temperature of 98.4° in a girl of from 14 to 17 years of age is, as a rule, the result of pathological disturbance, and this is *certain* if it is accompanied by increase in the rate of the pulse or by disappearance of the normal respiratory irregularity.[2]

2. The absence of sinus arrhythmia is of value in recognizing the presence of disease, and its return in convalescence affords a useful guide as to the advisability of permitting the patient to get up.

REFERENCES

[1] Lyon, D. M., and Wallace, H. L.: "The Mean Temperature in Non-febrile Hospital Patients," *British Medical Journal*, May 28th, 1932, p. 980.

[2] Paton: "Cardiac Arrhythmia in Childhood," *Edin. Med. Journ.*, January, 1927.

THE COLOUR INDEX OF THE BLOOD IN DIABETIC COMA

BY

R. D. LAWRENCE, H. A. LUCAS, AND R. A. McCANCE

(From the Pathological Department, King's College Hospital)

We have recently observed in three cases of diabetic coma an extremely high colour index, which has not to our knowledge been previously recorded. The recognized cytological changes in the blood during coma are: (1) Concentration of all the formed elements of the blood, including the plasma proteins, due to the dehydration usually present before treatment. This, *per se*, results in an increased red cell count and haemoglobin percentage, but a normal colour index. (2) A leucocytosis, often of considerable magnitude, accompanied by a shift to the left in the Schilling count, suggesting an increased activity of the bone marrow, but inadequately explained. A severe ketosis, apart from coma, may produce this latter change. The high colour indices now recorded should, if confirmed by others, be of interest to haematologists. As opportunities of studying diabetic coma are becoming increasingly rare, we hope this preliminary communication may lead others to study the blood picture when favourable opportunities arise.

These observations were made in the course of an intensive chemical study of the anuria or oliguria which sometimes occurs in diabetic coma: they will be published separately. The significance of the haematological picture was not fully appreciated at the time, and our investigations in this respect are sadly incomplete. The size of the blood cells and the Price-Jones curve were not investigated. However, the blood counts were carefully done and checked by independent observers; their general trend was indubitable. The general aspect of these coma cases is kept as short as possible as they will be fully reported elsewhere. The haemoglobin was estimated by Haldane's method.

HISTORY OF CASES

CASE I

Male, aged 52, admitted and seen for first time on November 18th, 1931, in complete coma due to omission of insulin. Severe ketosis and acidosis were present. He developed extensive gas gangrene four days later, spreading from the site of a subcutaneous saline infusion. This no doubt accentuated and prolonged the anaemia, which is always observed as the blood becomes diluted with the fluids given during treatment. Treatment: insulin, carbohydrate, and salines for the coma; no therapy for the anaemia. Complete recovery. The plasma proteins (always between 6 and 5.4 per cent.) showed no evidence of anhydraemia. The gastric acidity was normal.

Blood Counts

Date	R.B.C. Millions per c.mm.	W.B.C. Thousands per c.mm.	Hb per cent.	Colour Index
18/11/31	4.700*	—	122	1.3
26/11/31	2.300	5.200	62	1.4
4/12/31	1.900	2.400	52	1.37
9/12/31	2.080	2.800	62	1.49
14/1/32	2.752	2.800	78	1.42
18/2/32	5.000	—	94	0.94

* On admission before treatment.

CASE II

Female, aged 55, very debilitated and in complete coma due to the prolonged omission of insulin. Treatment: as in Case I. The ketosis was removed within twenty-four hours. The first blood count was not done until fourteen hours after admission. On the first day the plasma proteins were 6.5 per cent., and later fell to the constant figure of 5.8. Complete achlorhydria after histamine was present.

Blood Counts

Date	R.B.C. Millions per c.mm.	W.B.C. Millions per c.mm.	Hb per cent.	Colour Index
22/2/32	4.420	—	100	1.14
25/2/32	2.800	—	90	1.6
27/2/32	3.540	—	94	1.54
7/3/32	3.020	—	70	1.16
14/3/32	2.750	—	60	1.09
28/3/32	3.100	—	52	0.83

CASE III

Female, aged 60, seen for first time in profound coma due to prolonged omission of insulin. Treatment: as in the other two cases, except that bicarbonate was given. Dehydration and ketosis were rapidly removed, but death from circulatory collapse took place thirty-six hours later. Necropsy showed chronic myocardial degeneration and renal sclerosis. She showed the leucocytosis frequently present in severe ketosis. The halometer reading was 4.3 per cent., suggesting megalocytosis.

Blood Counts

Date	R.B.C. Millions per c.mm.	W.B.C. Thousands per c.mm.	Hb per cent.	Colour Index
27/4/32	3.79	23.8	86	1.14
28/4/32	2.636	17.8	65	1.19

DISCUSSION

Since we have begun to study the complete blood count in coma three successive cases have shown a high colour index, and two have been extremely high. This high index has persisted in two cases for a considerable time and through considerable variations in the total count, but has returned to normal without any specific therapy.

The immediate explanation of the high index would seem to lie in a true megalocytosis. Diabetic dehydration would not *per se* affect the index, nor would the increased water content and swelling of the red cells in acidosis. Unfortunately our observations do not include any reliable study of the size of the red cells, which we hope may be undertaken by ourselves and others as such cases occur.

The ultimate explanation of a true megalocytosis, if such occurs, is at present speculative, but is probably to be referred to a change in the activity of the bone marrow. This view is supported by the leucocytosis that frequently occurs in severe ketosis, from which we know that the bone marrow is certainly affected by acetone bodies. The leucocytosis is rapid, but changes in the red cell picture are probably more slowly produced. Perhaps it may be observed initially only when the patients, as these did, have progressed slowly into coma, giving the exciting cause time to act. The persistence of the high colour index in our cases suggests that the disappearance of the abnormality is also a slow process. A search of the existing literature has not disclosed any records of such high indices in diabetic coma or in conditions of non-diabetic dehydration and acidosis. Asche,[1] however, records a slightly high index in some cases of renal failure, presumably with acidosis.

We are indebted to different members of the pathological department, King's College Hospital, for various emergency blood counts, and to Dr. L. J. Witts for his critical interest and assurance that this blood picture is new to haematology.

[1] Asche, B.: *Arch. Int. Med.*, 1924, xliv, 506.

Memoranda

MEDICAL, SURGICAL, OBSTETRICAL

ACUTE HAEMORRHAGIC PANCREATITIS

The following case presents certain interesting features which make it worthy of record.

The patient, a very stout woman weighing 15 st., was admitted with the following history. Two days before admission she developed pain across the upper abdomen, which continued until she came into hospital, and was so agonizing, soon after its onset, as to require morphine. The pain remained localized to the upper abdomen with no radiation. There was slight vomiting on two occasions during the illness, the vomitus consisting of food eaten a short time before, stained with a little bile. There was marked nausea for all kinds of food. During the illness her relatives noticed that she preferred to lie on her side rather than her back, but they could not say for which side this preference was shown. The temperature on the morning of admission and on the first day of her illness was in each case 100° F.

On admission, although complaining of pain in upper abdomen, the patient seemed to be far more troubled by extreme dyspnoea. The respiratory rate was 48 per minute, the face pale, and having a slightly cyanosed appearance. Abdominal palpation showed tenderness under the right costal margin and in the epigastrium, which was, in both situations, of moderate degree only. No abdominal distension was noted. She insisted upon lying on her right side, but shortly before death turned the other way, and remained in that position until the end. The cyanosis gradually became more marked, the quality of the pulse poorer, and she died seven hours after admission to hospital.

The following figures were obtained on admission, and at three-hourly intervals afterwards: pulse 130, 128, 134 per minute; respirations 48, 46, 44 per minute; temperature 101°, 102°, 103.8° F.

Post-mortem Examination

No jaundice was observed. The heart showed a slightly dilated left ventricle, the myocardium being rather soft. The lungs were normal. Well-marked and recent fat necrosis was present all over the omentum, mesentery, and in subperitoneal fat. On opening the lesser sac there was not only fat necrosis, but much haemorrhage into the tissues, the exposed pancreas being dull red with haemorrhage. The duodenum contained bile: biliary papillae, patent. There was some oedema of the mucosa in this region. The liver showed intense fatty infiltration with, probably, some degeneration: bile duct, patent and very slightly dilated. No calculi were present. The gall-bladder contained clear bile and about fifty small stones 1 mm. to 3 mm. in size, and having finely nodular surfaces. In the fundus of the gall-bladder there was a series of epithelial crypts enclosed in the wall, and containing stones, the whole forming a soft mass 3/4 in. across. The pancreas was entirely necrotic, and infiltrated with haemorrhage, which extended into the surrounding tissues. Spleen: enlarged and rather soft, pulp diffluent—septic spleen. Kidneys: cortex pale, organs rather soft, some cloudy swelling.

Commentary

The following conclusions are based upon the case described and upon two other cases seen.

1. It is usually stated that haemorrhagic pancreatitis is commonly diagnosed as perforation of the stomach or obstruction of the bowel. Those cases I have seen bore a greater resemblance to acute cholecystitis. In all of them the epigastric tenderness was much more localized and tenderness and rigidity less marked than with a perforation. In addition, there was very marked tenderness over the gall-bladder region in each instance. In no case was the temperature normal or subnormal, and in the case described above it gradually rose to nearly 104° before death.

2. In two cases in which Loewi's adrenaline eye test was tried the results were negative.

3. Slight cyanosis and dyspnoea are stated to be signs of acute haemorrhagic pancreatitis. These were present in two of the three cases, and appeared shortly before death. The third case showed neither symptom, and recovered after drainage of the pancreas and gall-bladder. It therefore seems that these symptoms are terminal features of the condition. Interference with the respiratory function through the diseased pancreas lying against the crura of the diaphragm is usually claimed to be the cause of the cyanosis. In two of the cases I have seen there have been no pathological features in the lungs, such as consolidation or collapse. In the third there was oedema of both bases. In the case described above it was noted that the cyanosis became more marked as the quality of the pulse degenerated and the temperature rose. It thus seems probable that the cyanosis is due to the toxic action on the circulatory system of the existing septicaemia.

4. It is interesting to note that impaction of a gall-stone at the ampulla of Vater, allowing the regurgitation of bile along the pancreatic duct, is by no means always the cause of acute haemorrhagic pancreatitis. The common bile duct was quite patent in two of the cases, and in the one described the contents of the bowel were examined for a gall-stone without success. There was nothing in the history of these cases suggesting gall-stone colic, but both cases were associated with infection of the gall-bladder. Consequently it is possible that infection by continuity of tissue, or by the blood or lymphatics, may be active causes of the pancreatic condition.

Conclusion

From my very limited experience of this comparatively rare condition I have come to the following conclusion. When, upon the examination of a case which resembles acute cholecystitis, one finds that there is tenderness as marked in the epigastrium as it is in the right subcostal region, and that the patient appears a little more upset than is the case with an ordinary cholecystitis, the abdomen should be opened at once and a haemorrhagic pancreatitis looked for. This is important, for upon a busy receiving night there is a tendency for such a case to be left over. To procrastinate is fatal; for if one waits for what are commonly described as signs of the disease—cyanosis, dyspnoea, ecchymoses of the loins—the patient is probably doomed to a very early death.

My thanks are due to Mr. John Patrick, who kindly allowed me to publish the case, which was admitted to his wards, and to Professor Shaw Dunn, who performed the post-mortem examination.

ALEXANDER LYALL, M.B., Ch.B.

Royal Infirmary, Glasgow.

A NOTE ON BLOOD TRANSFUSION

Experience of many blood transfusions has shown that the majority of difficulties are met with in the taking of blood from the donor, rather than in the giving of blood to the patient. The following technique, in the opinion of the writer, undoubtedly gives the best results.

The donor lies comfortably on a couch with his arm abducted to a right angle, his fully supinated forearm being supported on a table of suitable height standing some eighteen inches from the couch. A stool, on which is placed a bowl of water at a temperature of 110° F., is adjusted directly beneath the elbow, and a Keynes's flask containing 150 c.cm. of 2 per cent. sodium citrate is placed in it. The top of the flask should reach to within one inch of the back of the elbow. A sphygmomanometer is adjusted to the donor's arm, and raised to a pressure of 80 mm. of mercury. The front of the elbow is cleaned with ether, and then, using a small syringe and a very fine hypodermic needle, a drop of 1 per cent. novocain is injected over the selected vein, so as to form a superficial anaesthetized area of skin. Blood donors unanimously declare their gratitude for this, and the surgeon is enabled to use a large-bore venesection needle with greater

ease. The blood is drawn off with a well-sharpened French's needle, to which is attached a medium-sized piece of rubber tubing some six inches in length. Before use, citrate solution should be run through the needle and tube. The needle is introduced into the vein through the anaesthetized area with the point directed towards the hand, and the blood is run directly into the flask. The donor is asked to open and close his hand during this procedure. While the blood is being withdrawn, an assistant gently rotates the flask in a circular fashion to secure rapid mixing of the blood and citrate solution.

The points emphasized in favour of this method of drawing blood are: first, its simplicity ; next, the fact that the donor experiences no pain ; and, lastly, the introduction of the needle point in a distal direction to meet the venous blood flow seems to be more reasonable than the usual procedure of directing it proximally.

In cases of surgical emergency it has been found that the most suitable vein for the introduction of blood into a patient is the internal saphenous, where it lies just in front of the internal malleolus. It is very constant in its position here, and can be rapidly exposed through a horizontal half-inch incision under local anaesthesia. A cannula is inserted into the vein and tied in position. In the majority of cases the blood can be run in by gravity, using a funnel with a long piece of rubber tubing attached, but in a small percentage of cases, where the patient has had a considerable recent haemorrhage and the veins are collapsed, gravity is insufficient, and it is necessary to apply pressure to the entering blood. There can be no doubt that the apparatus of Geoffrey Keynes is one of the best for this purpose.

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Surgical First Assistant and Registrar,
London Hospital.

British Medical Association

CLINICAL AND SCIENTIFIC PROCEEDINGS

BORDER COUNTIES BRANCH

Subcutaneous Injection of Oxygen, and Carbon Dioxide with Oxygen

At the sixty-first annual general meeting of the Border Counties Branch Dr. D. C. Welsh, the incoming president, delivered an address on the use of oxygen, and carbon dioxide with oxygen, by subcutaneous injection.

Dr. Welsh explained that he proposed to deal with the administration of oxygen for its systemic action, and not to consider its injection into the peritoneal and pleural cavities and other sites for its local effects. Such administration might be beneficial in all cases where anoxaemia was present. Although a human being of average weight at rest consumed about 500,000 c.cm. of oxygen in the twenty-four hours, the amount actually stored in the blood was only about 600 c.cm. The amount the blood could store was termed its "oxygen capacity," but normally it was not saturated to full capacity, for arterial blood left the lungs containing about 96 per cent. of full saturation, and venous blood only 66 per cent. When the saturation fell as low as 60 per cent. the patient began to have difficulty in breathing. Muscular exercise resulted in the absorption of the oxygen in the blood, and thus caused a temporary fall in its saturation. The carbon dioxide which was formed stimulated the respiratory centres, resulting in deeper breathing and the absorption of more oxygen from the atmosphere. Excess of carbon dioxide was removed from the alveoli and more was able to escape from the capillaries ; thus a man was enabled to maintain a balance between his oxygen intake and his carbon dioxide output, and to retain his oxygen blood saturation at its normal level. Such a balance was less successfully achieved when for any pathological reason the entry of oxygen into the blood stream was impeded. This resulted in an increase of the hydrogen-ion concentration to a point which broke down the alkaline buffers and caused the blood to become acid. The respiratory centres were then stimulated, partly owing to the acid reaction of the blood bathing them, and partly owing to the carbon dioxide which was liberated from the broken-down alkaline buffers. In spite of the stimulation of these centres the patient was prevented by the pathological condition from absorbing a larger amount of oxygen with each breath, and so the oxygen saturation of the blood remained below the 60 per cent. level, the breathing continued to be rapid, and the least exertion caused distress. So long as this low saturation persisted the increased hydrogen-ion concentration remained, as also did the stimulation of the respiratory centres, thus establishing a vicious circle which might lead to death. Inhalation of oxygen had not proved entirely satisfactory as a remedial measure for various reasons, one of which was that the absorption of this gas was limited to the capacity of haemoglobin to combine with it. The disadvantages of oxygen inhalation by means of the usual procedures could be avoided by injection, all that was necessary being the supply of a sufficiency to raise the saturation of the blood to a level at which the hydrogen-ion concentration became normal and respiration was made comfortable ; in actual practice doses of 150 to 500 c.cm. were satisfactory.

As soon as injection was commenced the absorption of oxygen began, as was indicated by the slowing down of the rate of respiration. The blood promptly assumed a brighter colour, and the haemoglobin absorbed as much oxygen as it could hold, the saturation rising to 100 per cent. instead of to the normal 96 per cent. It was probable also that some oxygen was carried free or in solution in the plasma. The effect of the injection was not intensified by increasing the dose, the larger dose merely taking longer to be absorbed and so lengthening the duration of its effect ; the only way to increase the effect was to multiply the number of the sites of injection. The greater part of the dose remained at the site of injection, serving as a reservoir and continuing the action of the oxygen for two or three days. No danger was incurred either from too rapid absorption or from gas embolism. The condition called apnoea—the term applied by physiologists to cessation of respiration due to hyperoxygenation of the blood—had not occurred in Dr. Welsh's experience, though he had given about 2,000 injections. Gas embolism was not a possibility unless the oxygen was injected directly into a vein—an impossible occurrence if care was taken not to insert the needle in the neighbourhood of a large vein. The preferential site for injections was the outer border of the anterior surface of the thigh, about three inches above the upper border of the patella ; here there was a large subcutaneous space which could be inflated without pain or discomfort. The patients could walk without hindrance immediately after the inflation, so injections could be given in the consulting room if necessary. Any other site than the thigh for such injection could not be employed without some risk of harmful sequels—for example, emphysema of the neck might ensue after injection under the skin of the chest, or emphysema of the genital region following the introduction of oxygen under the skin of the abdomen.

Dr. Welsh then gave examples of actual cases, commencing with asphyxia in newborn infants. He described the mechanism of the prompt improvement which had been obtained, and explained how artificial respiration and the inhalation of carbon dioxide would be unsuccessful in the case of lungs which had not yet expanded. Moreover, when the respiratory centres were failing by reason of fatigue, their stimulation would be ineffective. In addition to neo-natal asphyxia, the injection of oxygen was particularly valuable in cases of drowning, suffocation, and carbon monoxide poisoning. In the last of these the oxygen saturation in the blood had fallen to zero, and injection was the only possible procedure. In lobar pneumonia the degree of asphyxia was less, but the cardiac embarrassment and failure could be effectively remedied by the injection of oxygen, especially since the good results would continue for several hours. The treatment could therefore be applied early, as soon as the first

signs of failure were noted ; the various clinical manifestations due to the lack of oxygen would quickly improve, and resistance to the attack of the pneumococcus be steadily built up. Dr. Welsh suggested that the reason why those patients with so-called splendid constitutions so often succumbed to pneumonia was because the oxygen requirement of their tissues was so great that, when the entrance of this gas to the body was impeded, the demand made on the oxygen saturation of the blood was correspondingly great, and the vicious circle revolved increasingly rapidly until death supervened. It would appear, then, that pneumonia was a disease over which the medical practitioner could exercise a very definite control by the injection of oxygen. Dr. Welsh had accumulated a considerable amount of evidence that this remedy was most efficient, and described three illustrative cases. He thought it advisable that oxygen should always be injected at the beginning of lobar pneumonia, but not in bronchopneumonia in young children, for it was difficult to induce them to keep quiet during the injection, and a great deal of struggling followed. In pleurisy the pain could be relieved by oxygen injections, and the dyspnoea of later cases of pulmonary tuberculosis might be benefited. In cardiac asthma the response was most marked, the relief being almost instantaneous, as it was also in collapse due to haemorrhage.

Oxygen injection had a prophylactic value in the counteraction of post-operation shock. As soon as the patient had become insensitive to the anaesthetic, the gas was injected under full pressure at the rate of 500 c.cm. a minute. Adults received a dose of 500 c.cm., and children less according to their size. A good colour was maintained throughout the operations thus begun, and in no case had there been hesitation in breathing. A small cylinder of oxygen was used, containing sufficient for about forty injections, and being recharged, when necessary, from an ordinary cylinder by means of an adapter. The small cylinder was clamped on to a box containing two gauges, two reducing valves, and a tap, the pressure being thus reduced, and the tap allowing a flow of from 10 to 500 c.cm. per minute, and enabling the dose to be easily calculated. From the box the oxygen passed through a rubber tube terminating in a platinum needle, which could be sterilized in a spirit flame. This instrument was compact and easily portable ; in the lecturer's opinion it ought to be carried in the motor car of every general practitioner.

Reports of Societies

COMPARATIVE MEDICINE

The summer meeting of the University of London Medical Graduates Society was held on July 14th in the Zoological Society's Gardens. The proceedings included a scientific session, at which interesting material was presented.

Dr. S. ZUCKERMAN, in a paper on the menstrual cycle in the primates, said that the problems involved were complex and scarcely yet completely solved, although during recent years much had been done to clarify the obscurities of the relationships of the sexual cycle in the lower mammals and the primates—in other words, of oestrus and menstruation. Before any conclusions could be arrived at it was essential to realize that in animals one was dealing with the interaction of three cycles—ovarian, uterine, and vaginal—and with the activations and inhibitions of at least three hormones—oestrin, lutein, and anterior lobe pituitrin. The question was further complicated by the fact that external bleeding tended to occur in the lower mammals twice during each complete sexual cycle and only once in the primates. At the present time the interest and speculation centred largely round the physiological factors which determined the already well-known histological changes. After a summary of present knowledge, Dr. Zuckerman passed to the more theoretical question of homologies between the higher apes and such mammals as the dog, ending with a consideration of the process in man and its practical clinical importance in the determination of the fertile period of the cycle.

Colonel A. E. HAMERTON gave an interesting demonstration of human diseases occurring in animals. He said that the pathological department of the Zoo performed and recorded over a thousand post-mortem examinations a year. Many of these revealed conditions with which the human pathologist was familiar, but on the other hand certain animal groups showed immunity from many of the commoner human diseases. Thus, most of the lower mammals, including the monkeys, were immune from the common cold, to which the anthropoids fell easy victims —an interesting collateral proof of their human affinities. Again, post-mortem appearances suggestive of one infection might be found in animals to be due to a different organism, as when repeated cases of dysentery failed to furnish a single Shiga's bacillus, although Morgan I, Erdlicher, and paratyphoid could be identified. Some diseases, on the other hand, appeared to be of almost universal occurrence. Of these, the most striking example was tuberculosis, which infected all animals (with the possible exception of donkeys and mules), although in different strains. It was noteworthy in this connexion that the incidence of tuberculosis among the monkeys at the Zoo has been extraordinarily reduced since the introduction of sterilized tinned milk in place of fresh milk. Among other important and interesting problems discussed arose the question of rickets in burrowing and nocturnal animals. It was noteworthy that hedgehogs in captivity invariably developed the disease, while it was unknown among wild hedgehogs, though neither were exposed to sunlight and their food was apparently identical. Cod-liver oil completely failed to cure the condition in these animals.

At a meeting of the Paddington Medical Society, held on July 12th, Dr. F. C. MARTLEY, in an address entitled " Sickness insurance," gave an interesting account of the principles and development of insurance. He contrasted the relative advantages of sickness, endowment, and life assurance. The importance of sickness insurance to a medical practitioner was now freely recognized. It should be more fully realized that endowment and life assurance, in addition to their other advantages, were an excellent if indirect auxiliary to the work of medical charities, in so far as they reduced the strain upon the limited resources of such charities.

The annual general meeting of the Medical Society of Individual Psychology was held at the Florence Restaurant on July 14th. Dr. W. Langdon Brown was re-elected chairman, and Dr. O. H. Woodcock vice-chairman, for the ensuing session, with Dr. H. C. Squires as treasurer and Dr. F. G. Crookshank as secretary and editor. Accounts for the past year were presented by Dr. T. LAWSON, the retiring secretary and treasurer, who referred to the growth of the society, which now numbers nearly eighty members. Mr. C. W. DANIELS spoke on behalf of the C. W. Daniels Company, publishers of the medical pamphlets issued quarterly by the society, and a brief set of rules for the constitution of the society was adopted after discussion. The opening meeting of the next session will be held on October 13th, at 11, Chandos Street, when Dr. Adler has consented to deliver an address. To this meeting all medical practitioners will be admitted on presentation of their visiting-card. It is hoped that Dr. Adler, during his visit to England, will deliver addresses in Birmingham, York, and other provincial centres, as well as in London. Communications relating to these or other meetings should be made to Dr. Crookshank, at 57A, Wimpole Street, W.1, to whom applications for membership should also be addressed.

Reviews

A LIBRARY TEXTBOOK OF OPHTHALMOLOGY

The publication of the first volume of the *Text-Book of Ophthalmology*[1] by Mr. DUKE-ELDER bids fair to remove one of the reproaches of British ophthalmology in that none of its leaders has hitherto ventured on the task of preparing and issuing a library edition of a textbook on their subject. There are many first-class works on ophthalmology of the single-volume type, works that in a comparatively small compass give so true and sufficient a picture of ophthalmological conditions that they meet the need of the majority of students and practitioners. It is probably safe to say that there is no country which is better supplied with admirable textbooks and handbooks of this order. But there has been no attempt until now to produce a book of such a complete and comprehensive character as would satisfy the demands of the experts themselves, a book that might be considered encyclopaedic in its scope. It is true that Parsons did this for the pathological side of ophthalmology in his four-volume work, but for any general work in English on ophthalmology as a whole we have had to look to America. The *American Encyclopedia and Dictionary of Ophthalmology* in eighteen volumes and the *International System of Ophthalmic Practice* were such works; but both these were the combined production of many authors. The same may be said of the German *Kurzes Handbuch der Ophthalmologie*, and the Graefe-Saemisch *Handbuch der Gesamter Augenheilkunde*. Composite works of this order are of high value. It may be that in these days pressure of time and the extension of knowledge may compel us to be satisfied with this type of publication, but such composite books do not and cannot bear the same stamp of character as the work of a single author who is a master of his subject and able to grapple with so large a task.

Mr. Duke-Elder has essayed this task. He has published the first volume of three that are to form the complete work. This first volume is in our judgement a great book. It is great by reason of its bulk, for it exceeds a thousand pages; it is great in its conception, and also great in its achievement. The author may well be congratulated upon such a piece of work—upon his ability to produce it and his industry in producing it. The standard he has set for himself in this first volume, which deals with matters that have been particularly the subjects of his study, will make his succeeding task—that of embracing the many-sided aspects of clinical ophthalmology—difficult indeed, and the more meritorious will be his achievement if he wins through. In that event we may say with assurance that there will be no work on ophthalmology in the English language to match it.

The first volume deals with the eye as a working instrument of precision. There is first considered the origin of the light sense and then of the eye itself; following this is an account of the comparative anatomy of the eye and of its associated apparatus, with a critical summary of the methods of anatomical investigation. Next come sections on the detailed anatomy of the orbit, of the lids, the conjunctiva, the lachrymal apparatus, and of the central nervous mechanism subserving vision. One section is devoted to an account of the ontogenetic development of the visual apparatus, the significance of visual pigment, and the influences of heredity; it is one of particular fascination. Other sections deal with the physiology and biochemistry of the eye, physiological optics, visual sensations and perceptions, and a final review of the nature of perception.

A judgement of the several parts of such a work must necessarily be to some extent biased by the point of view of the reviewer. The subject that attracts him most will capture his attention; or, conversely, exercising his critical faculty, he will examine those parts in which he is sure the author (from knowledge of his past work) will excel, and compare these parts with others of which he may think his experience may be less particular. Whichever way this book is examined its high standard is confirmed. The book is large, but its largeness is not due to inflation, for the author has a style marked by an exemplary economy of words. The bibliographies are ample, and representative of the work of British and foreign literature. A very human feature of the book is to be found in several portraits of former masters of ophthalmology or explorers in branches of science who by their work have aided ophthalmology. Finally, we may commend the publishers for their share in this volume. The style of the book, its paper, its print, and above all its illustrations, are all first-class.

[1] *Text-Book of Ophthalmology*. By W. Stewart Duke-Elder, D.Sc., Ph.D., M.D., Ch.B., F.R.C.S. Vol. i. London: H. Kimpton. 1932. (Pp. xxix + 1,124; 1,022 figures, 7 plates. 63s. net.)

RECENT ADVANCES IN PATHOLOGY

In *Recent Advances in Pathology*[2] Drs. HADFIELD and GARROD aim at presenting recently acquired knowledge of disease processes in a form useful to the student of medicine. They have succeeded admirably, and students will find in this book simple, straightforward, and clear accounts of most of the recent work which has not yet found its way into the textbooks of pathology. Among the great variety and volume of pathological research, the authors have given preference to work relating to common diseases and to that which sheds new light on general principles. Carcinoma, nephritis, and pneumonia are dealt with at considerable length because of their frequency; adenoma of parathyroid, because of the newly acquired knowledge of its effect on calcium metabolism.

The first chapter contains a good account of the reticulo-endothelial system and of its functions, together with a description of the reticulo-endothelial splenomegalies. Maximow's theory of the development of macrophages from lymphocytes is approved, and it is suggested that they can be developed from reticulo-endothelial or lymph-adenoid tissue, which seems to imply that the lymph-adenoid tissues will soon be included in the reticulo-endothelial system. The description of tissue-culture methods, and particularly of the work of Strangeways and Canti, forms a good introduction to the four chapters which deal with experimental cancer. These latter give brief and clear descriptions of the work done on tar cancer, transplantation of tumours, filterable tumours, tumour metabolism and heredity, including that associated with such names as Jensen, Fibiger, Rous, Gye, and Warburg. The story is well told of the use made by Fibiger of the accidental finding of carcinoma of the stomach in three rats used in experimental tuberculosis and of his determined search for the method of infecting rats' stomachs with spiroptera. The chapter on therapeutic cancer research gives an account of the action of x rays and radium on irradiated tumours and on tissue cultures, of the blood changes in radiologists, and of the action of lead on tumours. Experimental pneumonia is dealt with at some length, and the experiments of Cecil and Blake are quoted as proving that in lobar pneumonia the air passages form the port of entry for the pneumococcus. It is now generally accepted that carcinoma of

[2] *Recent Advances in Pathology*. By Geoffrey Hadfield, M.D., F.R.C.P., and Lawrence P. Garrod, M.B., B.Ch., M.R.C.P. London: J. and A. Churchill. 1932. (Pp. x + 392; 67 figures. 15s.)

the lung is the commonest mediastinal neoplasm. Pneumonoconiosis, silicosis, and asbestosis have all been investigated afresh, and psittacosis has been described.

After the publication of Miss Russell's monograph on nephritis, with its complete classification and new terminology, it is inevitable that, in a book of this kind, considerable space should be devoted to Bright's disease and its morbid antomy. The most illuminating work on the kidney published in recent years—that of Khanolkar (*Journ. Path. and Bacteriol.*, 1922, xxv, 415), working in Professor Boycott's laboratory—appears to have been overlooked by the authors of this book, and its significance has certainly been missed by a great many pathologists. According to Khanolkar's conception of nephritis all the thirteen types of renal disease described in this book could have been grouped under the headings of inflammation (acute and chronic), degeneration, and ischaemia, their variety being due to the continuity of action or otherwise of the noxious agent and to the periods of rest enjoyed by kidney units.

Most of our knowledge of the functions of the ductless glands has been gained by their effects when abnormal. For example, atrophy of the adrenal cortex is the cause of Addison's disease, and some cortical tumours are associated with over-development of male characters, whether they occur in males or females. Reference to work on the pituitary gland has been unaccountably omitted. The greatest need in pathological literature is a textbook of pathological physiology, and it is to be hoped that this excellent book will, by its limitations and omissions, provoke the one or two professors who could attempt it to write one.

A STUDY OF ARTHRITIS

Professor ALLISON and Dr. GHORMLEY have prepared an elaborate monograph[3] on a basis of 289 cases of arthritis treated in the Massachusetts General Hospital. These have been studied from the clinical, radiological, bacteriological, chemical, and pathological points of view. The authors remark on the confusion which exists in the classification and nomenclature of arthritis, and consider that this can only be improved when the following questions can be answered: (1) What is the aetiological factor? (2) What tissue of the joint is primarily affected? (3) What is the character of the tissue change? The authors begin their study with a discussion on the physiology and chemistry of joint structures, and then proceed to a classification. They divide joint disease into those of known origin and those of uncertain origin. In the first group appear traumatic arthritis, arthritis of bacterial origin, arthropathies (Charcot's joints), and constitutional disturbances, among which they include hysteria and intermittent hydrarthrosis. Those interested in the classification of "rheumatic diseases" will be disappointed to find that the group "origin uncertain" comprises proliferative arthritis, degenerative arthritis, and "unclassified," without further comment. Tuberculous traumatic arthritis associated with loose-body formation and pyogenic infections of joints are discussed at some length. Proliferative arthritis corresponds with the type usually called rheumatoid arthritis, and degenerative arthritis with the type usually called osteo-arthritis. The authors rightly condemn the latter names as meaningless and misleading, but it is doubtful if the names "proliferative" and "degenerative" are likely to find universal acceptance, since the proliferative type is associated with atrophy of bone and muscle, and the degenerative type with proliferation of bone.

[3] *Diagnosis in Joint Disease. A Clinical and Pathological Study of Arthritis.* By Nathaniel Allison, M.D., F.A.C.S., and Ralph K. Ghormley, M.D. London: Humphrey Milford, Oxford University Press. 1931. (Pp. xi + 196; illustrated. 52s. 6d. net.)

The chief feature of the book is its illustrations, which are models of clarity, whether they are reproductions of radiographs, microscopical slides, or naked-eye specimens. In addition to the black-and-white photographs and plates are six coloured plates of considerable artistic merit. Each chapter closes with several complete case records and an adequate bibliography. This monograph is a credit to both authors and publishers. It must be studied by all those whose work is in any way connected with arthritis, and there are few medical practitioners to whom this cannot apply.

GENERAL PRACTICE

A little book entitled *A Guide to General Practice*[4] has been written by Dr. A. H. DOUTHWAITE. It is astonishingly complete and effective, seeing that it is composed by a consulting physician who, in the earlier part of his career, had barely more than four years' experience in the kind of practice of which he writes. His apologia is that "a dangerous hiatus exists between the intensive hospital education of the medical student and the hard-won self-education of the experienced medical practitioner." It would be well if in every medical school there were given to students in their final year two or three lectures such as those on which Dr. Douthwaite's book is based. The book, in its turn, might be the basis of such lectures, though they would require to be supplemented by instruction in the routine matters of insurance practice, and in the general relation of the medical practitioner to local authorities and to the State in respect of public health, education, public assistance, infectious disease, mental deficiency, maternity, and other matters. These subjects are not specifically dealt with in Dr. Douthwaite's volume. It is a guide rather to the immediate necessities of post-graduation, to the embarkation on general practice, and to dangers and pitfalls that may be encountered in private practice before one is likely to have acquired enough experience to deal with them. There is, of course, a real possibility that the student, the post-graduand, or the non-medical reader will gather from a book like this an entirely false view of what general practice is like, or may be made. The snags of entering upon, and conducting, it, and the consequential and necessary precautions, are not so insistent or overwhelming as they must appear to be in a small volume in which they are collected for purposes of instruction or warning; and the joys and opportunities and satisfactions of such practice are altogether obscured in such a presentation. Dr. Douthwaite does something to set this right in his final paragraph: "Considered superficially the life might be assumed to consist of a wild race against time, involving loss of sleep, irregular and disturbed meals, battles with relatives, commercial travellers, bad debts, disloyalty, and the final development of ill-health"; but, "general practice is the most fascinating branch of all medical work, not only because every subject belongs to its devotees, but more because of the unrivalled opportunity of close contact with, and study of, human beings apart from their diseases. The majority of fellow practitioners and patients are a joy to meet, whilst the work itself is unquestionably fascinating." Something like this might be put at the beginning of the book as well as at the end. Here and there the author's language is not without a tinge of exaggeration, as in the following passage: "So long as the law allows a medical man to be pilloried by uninstructed jurymen, so long will a vast army of cunning but lunatic criminals remain at large to prey upon the population"—but within its field the book will be found a very useful and reliable guide.

[4] *A Guide to General Practice.* By A. H. Douthwaite, M.D., F.R.C.P. London: H. K. Lewis and Co., Ltd. 1932. (Pp. vii + 96. 4s. 6d. net.)

HYPOGLYCAEMIA

Dr. JEAN SIGWALD has written the most comprehensive study of hypoglycaemia[5] which has so far appeared in any language. The book is mostly concerned with hypoglycaemia produced by insulin, and its various clinical manifestations are discussed in exhaustive detail in more than sixty pages. An important section deals with spontaneous hypoglycaemia in non-diabetics and the recently established form which is due to neoplasms (mostly adenomata) of the pancreas. Probably the most valuable part of the work is the very extensive bibliography taken from the literature of all countries—a rare feature in French medical publications. By his thoroughness the author has produced a very serviceable book of reference. A few original observations from his patients and notes on experimental work on animals are included, but we cannot agree with Professor Rathery when he says in his preface that these throw much new light on the subject. The treatment of hypoglycaemia receives very brief mention, and we should have thought that pituitary extract deserved mention as much as adrenaline, and more than caffeine, as a useful drug in an emergency.

ALLERGY IN BRIEF

Dr. G. H. ORIEL brings fresh reinforcements into the field of allergy in the form of a small work[6] belonging to the Pocket-Monographs on Practical Medicine Series. In an admirable "discussion" the author traces the argument step by step under the shadow of an opening sentence in which he admits that the "fundamental problem . . . is not yet solved." Research has shown that, generally speaking, if a person reacts abnormally to one protein he is liable to develop the same altered reaction to another. Given a potentially allergic patient, the antigen to which he becomes sensitized depends on his environment. In keeping with this is the fact that if a form of infection can be established the resulting lesions depend on other things than the type of organism which is living in the focus. A slight alteration in a protein molecule will cause it to act, antigenically speaking, as a foreign protein. It seems possible to alter tissue in such a way that it becomes an antigen. Infections, trauma, or pregnancy may have this effect upon tissue protein. Hence, in a potentially allergic patient sensitization may occur to his own changed proteins. As a result of the antigen-antibody reaction, tissue alteration is likely to occur, so that there are really two sensitizations—(1) to the foreign protein (primary antigen), and (2) to the altered tissue protein (secondary antigen). To take an example, the injection of pollen in a pollen-sensitive patient releases the secondary antigen. Being a breakdown product of tissue, the latter probably represents something intermediate between heat-coagulable proteins and the polypeptides, and may be identical with the "urinary proteose" described by the author. As regards non-specific desensitization, it seems that *local* reaction is essential for successful treatment of allergy. Thus success with tuberculin is probably not due to the specific action in raising resistance, but to the local reaction produced on injection.

The discussion concludes with the statement that the tendency of modern research is to pay less attention to the specific proteins to which the patient may be sensitized and more to the underlying state which makes sensitization possible. A good summary of procedures used in the treatment of allergic diseases is given in an appendix, while there are notes on skin tests and the making of extracts for desensitization. The rest of the book consists of a well-balanced statement on the position of allergy with an account of the treatment of particular diseases in which it is present. Dr. Barber's preface indicates that the practical application of knowledge of allergy is still in the preliminary stage, and that prolonged observations and experiments are required before its value can be appraised.

[5] *L'Hypoglycémie*. Par Jean Sigwald. Préface du Professeur F. Rathery. Paris: G. Doin et Cie. 1932. (Pp. 320. 45 fr.)

[6] *Allergy*. By G. H. Oriel, M.D., with foreword by H. W. Barber, M.B., B.Ch., F.R.C.P. Pocket-Monographs on Practical Medicine. London: J. Bale, Sons and Danielsson, Ltd. 1932. (Pp. ix + 78. 2s. 6d. net.)

NOTES ON BOOKS

Orthopedics in Childhood[7] has been written by Dr. WILLIAM L. SNEED of New York as one of the volumes of the Everyday Practice Series. Holding that many orthopaedic surgical procedures are not within the scope of the general practitioner, the editor recommends this volume as an attempt to present the essentials of orthopaedic practice as they may be understood and applied by them. Dr. Sneed has, we think, succeeded in producing a volume which fulfils the requirements indicated by the editor. The illustrations are satisfactory.

In the thirteen delightful essays collected from his own odysseys in his *Greek Byways*,[8] Dr. T. R. Glover, Public Orator at Cambridge and author of other well-known works on ancient Greece, transports the mundane medical man to the exhilarating mental atmosphere of classical culture and thought so familiar to those bred upon the old humanities, like his friend Professor F. J. Foakes Jackson, formerly of Jesus College, Cambridge, and now of the Union Theological Seminary, New York, to whom there is a charmingly intimate dedication. In this wide survey of Greek civilization medicine is not omitted; Dr. Glover's previously published article on "Diet in History" was noticed in our columns on December 19th last. In the essay on the "Manners of a Gentleman" there is a reference to Greek medicine in Rome, and it appears that if the medical man's social position was above that of the perfumer and the dancer, he was obviously not in society. When discussing the daemon environment Dr. Glover mentions incubation, and quotes to the effect than "in Ceos, where men once slept in the shrine of Artemis, to-day they sleep in the church of St. Artemidos." The physician who is a naturalist will find much to interest him in the scholarly and generously annotated essay entitled "Curiosities of Natural History."

To compose an elementary textbook on any branch of medicine is probably more difficult than to compose an advanced one, as Dr. JAMES G. POE may have found out when he set to work on his *Modern General Anesthesia*.[9] The need for compression not only enforces clear thinking and crystal-clear writing, but introduces also the difficult problems of what must be left out. In view of the title he has chosen, it is a little strange that the author should include, when space is so precious, a chapter on local and spinal anaesthesia; nor is it easy to understand why he thought it necessary to occupy two pages with a description of intravenous ether administration, only to end with a warning against the use of this method. The teaching is, generally speaking, sane and practical. Dr. Poe obviously knows his own mind, and has had large experience as an administrator. But there are too many sentences so clumsily put together that their meaning is obscure, or liable to misconstruction by a beginner. Possibly it is a misapprehension of what the author intends; but at least the obvious meaning of the second page of the preface is that the main principles of the art and science of anaesthesia were first discovered and enunciated by Dr. Poe some sixteen years ago.

[7] *Orthopedics in Childhood*. By William L. Sneed, M.D. Everyday Practice Series. London: J. B. Lippincott Company. 1932. (Pp. xviii + 318; 145 figures. 21s. net.)

[8] *Greek Byways*. By T. R. Glover. London: Cambridge University Press. 1932. (Pp. 319. 12s. 6d.)

[9] *Modern General Anesthesia: A Practical Handbook*. By James G. Poe, M.D. Second edition, completely revised and enlarged. Philadelphia: F. A. Davis Company. 1932. (Pp. 231; 8 figures. 2.50 dollars.)

The First Hundred Years

NOTES ON THE HISTORY OF THE ASSOCIATION

DURING recent months we have published a series of advance extracts from the "History of the British Medical Association, 1832–1932," which Mr. E. Muirhead Little, F.R.C.S., has compiled at the invitation of the Council. Copies of this commemorative volume of 342 pages, with 45 illustrations, will be presented to members attending next week's Centenary proceedings in London. We print below an abridgement of the section of the History devoted to the Association's Journal, which for the past seventy-five years has been known as the "British Medical Journal."

THE ASSOCIATION'S JOURNAL

When the Provincial Medical and Surgical Association was first established it had no weekly or fortnightly periodical to report its doings and represent its interests. Like other medical societies it published an annual volume of transactions, the first of which appeared in 1833. The eighteenth volume contained reports of the papers read at the Annual Meetings for the years 1850 and 1851. The last eleven volumes were overlapped, as it were, by the volumes of the *Provincial Medical and Surgical Journal*, a weekly publication of which the first number appeared on October 3rd, 1840, under the joint editorship of Dr. Hennis Green of London and Dr. R. J. N. Streeten of Worcester.

The *Provincial Medical and Surgical Journal* may be considered as the direct ancestor of the *British Medical Journal*, for, although at first its editors did not claim any official connexion with the Provincial Association, in the introductory address in the first number they mentioned among their objects:

"Second. The affording a special means of communication for the several medical and branch associations which have been formed in various parts of the Kingdom.

"Third. The promotion as far as possible of the interests of those admirable institutions, and *more* especially, of those of the Provincial Association."

The first issues were in octavo, which measured, when bound in a volume, seven inches by ten, the first issue containing fifteen pages of reading matter and three illustrations in the text, besides advertisements. For its size the *Provincial Medical and Surgical Journal* compared favourably with its contemporaries. On the scientific side it was well supplied with clinical records, and with papers on the practice of medicine and surgery. Its leading articles were well written, in a tone worthy of the high aims of the Association, and free from the vulgar abuse and scurrility which disfigured the pages of some of its contemporaries.

The *Journal* continued to appear under the same editorship until the end of March, 1844. In 1844 the title-page of volume viii bore the following information: "Edited for the Provincial Medical and Surgical Association by Robert J. N. Streeten, Secretary to the Association." The following announcement appeared in a leading article in the issue of April 3rd:

"The present number of this Journal is the first of a new series devoted entirely to the interests of the Provincial Medical and Surgical Association, and published under the control of its Officers and Council. The work will from this time be exclusively the journal of the Association, and no other interests, whether of publisher or proprietor, will be suffered to interfere."

In 1847 William Harcourt Rankin, M.D., became foreign editor. He became joint Editor with John Henry Walsh, F.R.C.S., in 1849. In January, 1853, the title of the paper was altered to the *Association Medical Journal*, and Dr. (afterwards Sir) John Rose Cormack became Editor. Towards the end of 1855 the Association assumed its present title, and in 1856 the *Journal* bore on its title-page "Edited for the British Medical Association by Dr. Andrew Wynter," who had been joint Editor with Dr. Cormack for a short time, and became sole Editor in 1856.

For its first ten years the *Provincial Medical and Surgical Journal* appeared weekly, until in the beginning of 1847, from motives of economy, it was changed to a fortnightly journal, and continued as such until it was superseded by the weekly *Association Medical Journal*.

In the ninety-two years that have passed since the first appearance of the *Journal* there have been occasions upon which a section of the members of the Association have been dissatisfied with it. This dissatisfaction several times found vent in proposals to abolish it, either on the score of expense or of its alleged lack of interest. Luckily these proposals did not take effect, for without that bond of union and organ of self-expression and communication between its component parts, the Association must long ago have died out. It was for the *Journal* alone that nearly all of the unattached members paid their subscriptions, and as at one time such members numbered some two-fifths of the total membership, their loss would have had a disastrous effect. It may be said without exaggeration that the *Journal*, throughout its long history, has represented the peripheral nervous system of the Association, without which communication with the Branches and Divisions would have been almost entirely non-existent, and paralysis must have resulted.

The "British Medical Journal"

In the first number of the *British Medical Journal*, dated January 3rd, 1857, the following leading article appeared:

"In accordance with the vote of the Association, its organ this day assumes the title of the 'British Medical Journal: being the Journal of the British Medical Association.' With a more comprehensive name, we trust to be able to present to the Associates a Journal more comprehensive than it has hitherto been possible to furnish. We hope that in a few months the many friends of the Association will enable us to carry on with more vigour than before several of the departments of the Journal. As it is not at present thought advisable by the Council to extend the paper every week to the full 32 pages, we have done the next best thing in our power by printing the whole of the Journal in a small type, which enables between two and three pages to be added to its capacity without increasing the number of pages, and we think it may be added with benefit to its appearance. The number and variety of the Hospital Reports have proved not the least of the new and interesting features presented to the Associates. It is trusted that this department of the Journal may be made still richer with the help of the hundreds of our Associates allocated to hospitals and dispensaries, whom we would earnestly beg to remember that the strength of the Journal lies in the practical contributions which they only can supply."

In 1861 Dr. W. O. Markham was appointed Editor. In 1866, on his appointment as a medical inspector under the Local Government Board, Dr. Markham resigned his editorial duties, and Mr. Ernest Abraham Hart was appointed his successor by the Committee of Council, and at the same time a "Journal Reference Committee" was appointed, consisting of the President of the Association, the President of Council, Dr. Markham, and Dr. Stewart. Mr. Hart retired in the spring of 1869, soon after which the Committee of Council appointed Mr. (afterwards Sir) Jonathan Hutchinson as his successor. At the Annual Meeting at Newcastle-on-Tyne in 1870, Mr. Hutchinson having resigned, Mr. Hart was once more

appointed Editor, a post which he occupied with distinction until his death in 1898. In the Report of the Council to the Annual Meeting at Leeds on August 7th, 1869, occurred this passage:

"The Council have to regret the resignation of the very able Editor of the Journal. Arrangements have been made for carrying on the business of the Journal until the appointment of his successor, which it will be the duty of the new Committee of Council to decide on at its first meeting."

No record remains in the volumes of the *British Medical Journal* for that or subsequent years of the circumstances which led to the sudden and regretted withdrawal of the Editor. It is to be presumed that it was sudden, for else why was the Council not able to announce the appointment of a successor at the same time as it announced the resignation, instead of having rather lamely to state that "arrangements have been made"? When the report of the Council came to be discussed at the Annual Meeting, if any explanation of the occurrence was asked for or offered, no report of it found its way into the pages of the *Journal*, either in that year or in the Jubilee year 1882, when a retrospect of fifty years was published. There was, however, a lively discussion as to the expenses of the *Journal*.

Ernest Hart was re-elected and resumed office in the same unobtrusive way as that in which he had quitted it, and, as far as can be ascertained, without any public discussion of the situation at any meeting of the Association. When in after years Hart came to recapitulate the doings of the *Journal* in an editorial article, he made no reference to the year 1869, but treated of his editorship as uninterrupted since 1866. Nor does the obituary notice which appeared in the *Journal* of January 15th, 1898, afford us any more information on this interlude.

Whatever may have been the trouble which led to his resignation, there can be no question about the success of Hart's editorship. Under the financial care of Francis Fowke, and the keen political direction of the Editor, the *Journal*, and the Association with which its interests were so closely bound up, flourished.

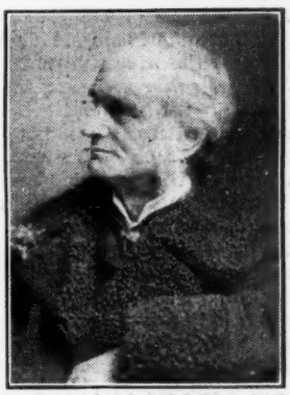
There is no doubt but that the Council was right in 1869 in speaking of Hart as "the very able Editor." His ability was outstanding, and during his long term of office he increased the value and usefulness of the paper and made it known beyond professional circles, even though his many other interests, his journeys abroad, and his long fatal illness necessitated leaving much of the work to his very capable assistant and successor, the late Sir Dawson Williams.

Ernest Hart and his Critics

But although the Editor was so successful, some of his activities did not commend themselves to a number of the most prominent and renowned leaders of the profession, especially the teachers in the metropolitan schools of medicine. As Sir Dawson Williams has said,[1] Hart was never disposed to play second fiddle: the emoluments he derived from his office as Editor were small, and his active spirit found many other outlets, which enabled him to entertain freely in his large house in Wimpole Street. It was generally known that he was largely interested in the sale of a foreign mineral table water, which was well advertised in the *Journal*. This and other such facts, and the memory of his early career, no doubt prejudiced his critics against him, so that when in 1888 an article appeared in the *Journal* headed in large type, "The Handwriting of the Dying Emperor," and containing a facsimile reproduction of a note written by the German Emperor Frederick casting reflection on the treatment of his case by Professor Von Bergmann, there was at once a very general outburst of protest. A memorial was drawn up, signed by 186 of the leading physicians and surgeons, members of the Association in London and the provinces, and presented to the Council, drawing "the attention of the President and Council to the publication in the 1,450th number of the *Journal* of the Association of a facsimile or 'script' by the late Emperor of Germany . . ." The Editor defended his action, but expressed regret for the appearance of the script in the columns of the *British Medical Journal*. It was unanimously resolved:

"That this Council strongly deprecates the publication of any details in violation of professional confidence. The Editor of the Journal has given to the Council his assurance that he had reasons which he considered adequate for believing that the publication of the 'script' referred to in the protest laid before the Council was not a breach of confidence, but he expressed his regret for its publication in the Journal. The Council would express their own regret that under any circumstances that document was published."

A copy of this resolution was sent to Professor Von Bergmann by the President of the Council on January 16th, 1889. But this severe rebuke did not quell the Editor, nor did it satisfy the signatories of the memorial, who no doubt desired his dismissal. They returned to the charge next year, basing their complaints on the conduct of the advertisement columns of the paper, and also attacking the principle of anonymity of editorial articles. An answer was returned by the Council defending the character of the advertisements, and asking for specific charges. At the same time an Editorial Committee was appointed, consisting of the President of Council, Dr. Bridgwater; the Treasurer of the Association, Dr. C. Holman; Dr. R. Farquharson, M.P.; and Dr. Donald MacAlister. "To these the proofs of every article prepared for publication in the *Journal* are forwarded from day to day, and the Committee meets on Thursday to pass the pages for the press." Despite this concession on the part of the Council, the memorialists were not placated, and in August, 1890, a letter was addressed by them to the Council, expressing their disappointment and their determination to resign membership. Before doing so they made one more appeal to the Council. To this the Council returned a defiant reply.



ERNEST HART

At the ensuing Annual Meeting the following resolution was passed with only one dissentient:

"That this Meeting desires to express its satisfaction with the result of the present representative system of government of the British Medical Association, and their approval of the steps taken by the Council for the management of its Journal."

The complainants not making any appearance at the meeting, their cause was allowed to go by default, and they thus laid themselves open to be taunted by the triumphant Editor with despairing of the republic, and of having adopted a high-handed procedure. Looking at the question after the lapse of more than forty years, it seems clear that the memorialists do not come very well out of the episode. Feeling as strongly as they did that the honour of the Association was at stake, they should have carried the matter through by attending the Annual Meeting, and there and then proposing a resolution and supporting it with all the strength and influence they could command. As it was, they flaunted some of the dirty linen of the Association before the public, but refrained from sending it to the wash.

The Council at the Annual Meeting definitely affirmed its confidence in the Editor, whose position and influence seems to have become stronger than ever. For over seven years there was peace, and the fame of Ernest Hart increased yearly.

At the Annual Meeting of 1897 the question of the conduct of the *Journal* again came to the front. Mr. Lawson Tait brought forward a resolution declaring it desirable that the Council should exercise a more complete control over the paid Editor and not leave matters to the Reference Committee, which Mr. Tait contended to be illegal under the 9th Article of the Association. The President of Council having said that the resolution

[1] "The Middle Age," *Glasgow Medical Journal*, July, 1922.

would be taken as a censure on the Council, the matter dropped. The incident was symptomatic of serious dissatisfaction in some quarters.

On Hart's death in 1898, Dr. Dawson Williams, who had long been Assistant Editor, succeeded him, resigning in January, 1928, and being in his turn succeeded by his Assistant, the present Editor, Dr. N. Gerald Horner. From 1897 to 1917 the Assistant Editor was Mr. Charles Louis Taylor, who in 1910 acted for four months as Editor during the illness of Sir Dawson Williams.

As the previous pages will have shown, in the first half-century of the Association's existence the editorial chair of the Association's *Journal* was not always an easy or comfortable one. The work has always been responsible, and with the increase of membership and of the size of the paper it has not become lighter.

The contents of the *Journal* increased from 1,058 pages in 1859 to 3,640 in 1910, and the gross increase was really more than is shown by these figures, for in addition a *Supplement* containing Association news and notices, and other medico-political information, has been published separately since the beginning of 1903. Besides this, an *Epitome of Current Medical Literature* has been issued with the *Journal*, beginning with the first number of the year 1892, and still continues to afford a useful guide to contemporary cosmopolitan medical literature. From time to time special numbers of the *Journal* have been issued, such as the Jenner number, published to celebrate the centenary of his first vaccination from cowpox in 1796. On the occasion of the Diamond Jubilee the "Victorian Number" paid tribute to the glories of Her Majesty's illustrious reign. Among other noteworthy special numbers or supplements must be mentioned the Lister Jubilee number of December 13th, 1902, the special commemorative number of July 18th, 1925, on the occasion of the opening by King George of the Association's new House in Tavistock Square, and the Lister Centenary number of April 9th, 1927.

Sir Dawson Williams (1854-1928)*

Dawson Williams was a Yorkshireman who came up to London as a student at University College, where in due course he became house-physician. In 1884 he was elected assistant physician to the East London Hospital for Children, becoming physician in 1894 and consulting physician on his retirement in 1902, consequent on his promotion to the editorial chair of the *British Medical Journal*. His interest in paediatrics was lasting, and what he considered as his best work was a report to the committee of the Clinical Society on the periods of incubation and contagiousness of certain infectious diseases, which necessarily dealt chiefly with children. This represented four years' work. He also contributed articles to Allbutt's *System of Medicine*, and wrote an important book on the *Diseases of Infancy and Childhood*. But work such as the above naturally ceased on his appointment as Editor. His connexion with the *Journal* began in 1881, only three years after he took his first qualification. He was appointed hospital reporter in 1884, principal Sub-editor in 1886, Assistant Editor in 1895, and Editor in January, 1898. The position of hospital reporter, which involved visits to the principal hospitals in London, had brought him into personal relations with the leaders of the profession, and so made him known to many distinguished physicians and surgeons, to his subsequent advantage as Editor. The next thirty years were momentous for the British Medical Association, its *Journal*, and the profession. How eventful they were to be was little foreseen by Ernest Hart when, in his last illness, he said to his probable successor, "I am leaving you a nice quiet time." As Sir Dawson Williams said, in reply to the toast of his health at the Council Dinner in 1923, this forecast was very quickly discredited. The reconstitution of the Association, with all the turmoil and excitement which it caused, followed by the troublous and critical times of the introduction of the Insurance Act, and then the great war, made sure that the Editor's office should be by no means a sinecure or a bed of roses. In all these three trials he kept his head, and gave wise counsel to the Association in particular and the profession in general. His advice and his influence were always cast on the side of caution and moderation, while he was firm in maintaining the rights and privileges of the profession. Under his direction the *Journal* was improved in every way, and earned a reputation to which the *Times* bore testimony in a leading article on his retirement. The war, which threw heavy additional burdens on him, left him with a damaged heart, but, despite the remonstrances of friends, he persisted in his hard and constant work as Editor. The end came as he wished it should come, suddenly, and soon after his retirement. The numerous tributes to his fame in the lay, as well as in the medical, press, showed in what estimation he was held.

SIR DAWSON WILLIAMS

* This paragraph, and the one following it, are extracted from the section of the *History* entitled "Personalities."

Charles Louis Taylor (1850-1920)

Louis Taylor was an accomplished linguist, speaking or at least reading seven languages, including colloquial Latin. In 1886 he joined the staff of the *Journal*, became Assistant Editor in 1897 and served until 1917, when ill-health compelled his resignation. His memory was retentive and accurate of all that had appeared in the *Journal* in his day, and he made himself a master of certain subjects which were recurring subjects of public controversy. The interest shown in his casual notes on historical subjects led him to suggest a series of articles in the *Journal* which, under the headings of "Archaeologica Medica" and "Nova et Vetera," have appeared from time to time. Many of the earlier of these were written by him. He was a man of genial and kindly temperament, which endeared him to all those with whom he worked. He was a loyal colleague, and his fund of knowledge of the past and present of medicine, on which he was ever ready to draw in conversation, made him an interesting and stimulating companion.

The "Journal" in War-time

A leader in the first issue after the fateful Fourth of August, 1914, struck the right note and rightly appreciated the gravity of the situation. Through the next four and a quarter years the *Journal* was carried on with a more and more depleted staff in the editorial and printing and publishing offices, and in the last year of the war with a most inadequate supply of paper of questionable quality. Owing to the rationing by the Government of this most important material, each issue was reduced so that, instead of having as in pre-war times 60 or 70 pages of literary matter and as many of advertisements, the weekly issue now consisted of 64 pages, divided about equally between literary and advertising matter. The bound volumes on the shelves of the Library remain as mute witnesses of the progressive atrophy from which the paper suffered. Some part of the shrinkage was no doubt due to the much-reduced reports of Annual Meetings, but on the other hand a good deal of interesting war matter had to be curtailed or excluded as the difficulties of publication increased. But despite all obstacles, the *Journal* continued manfully to give to the members and the medical world a good account of events, and to provide them with reports of the latest doings and advances in medicine and surgery. In 1917 the Association published *British Medicine in the War*, being a collection of essays which had appeared in the *Journal* on problems of medicine, surgery, and pathology arising among the British armed forces. The *Epitome* contained numerous "War Numbers" and contrived to give information, despite the blockade, of what was being done on the Continent.

British Medical Journal

SATURDAY, JULY 23rd, 1932

A CENTURY OF SERVICE

On Tuesday of this week the British Medical Association completed the first hundred years of its life, and already members from far and near are assembling in London for the Centenary celebrations under the presidency of Lord Dawson. Like most big things, the Association began in a small way. It was conceived in the mind of one far-sighted man—a man of thought and action. Its birthplace was the board room of the Worcester General Infirmary, and its accoucheurs were fifty medical men who met there on July 19th, 1832. The founder, Sir Charles Hastings, at that time physician to the hospital, had already a distinguished record as an experimental physiologist and as a practical physician. For many years Hastings was the secretary and leading spirit of the Association, skilfully guiding it through shoals and rough seas. In recognition of his services to the profession and the public he received the honour of knighthood in 1850. He died on July 30th, 1866, aged 72. On Sunday a representative gathering meets in Worcester for the official centenary service in the Cathedral and the unveiling of a memorial window to the founder, and the occasion will be taken to unveil, also, a plaque upon the house in Foregate Street where he lived and practised.

For some time before he took the momentous step in 1832 Hastings had been more and more conscious of the shortcomings and disadvantages of professional life in the provinces. He had taken part in the foundation of the British Association for the Advancement of Science, and out of this preliminary work came the idea to do for medicine what the British Association was undertaking for science at large. His first move was to establish, with the help of some friends, the *Midland Medical and Surgical Reporter*, a quarterly periodical which made its bow in 1828. After publishing three volumes he began to lay a more comprehensive plan for raising the tone of provincial medical practice and uniting all classes of the profession. Correspondence with the subscribers to the *Reporter* had brought to light a widespread desire that medical men living outside London should combine in a friendly and scientific body whose first aim should be the diffusion and increase of knowledge in every department of medical science and practice. Hastings drew up a prospectus setting out the objects of the proposed society, and this, together with draft rules, was widely circulated through the profession. Finally, the historic meeting, to which all qualified medical men in the provinces were invited, was held at the Worcester Infirmary on July 19th, 1832. Dr. Edward Johnstone, a venerable physician of Birmingham, took the chair, and the meeting resolved to form the Provincial Medical and Surgical Association, and that this should meet once a year in the principal towns of the kingdom for the transaction of scientific and administrative business.

Hastings, in his address to the inaugural meeting, outlined some of the directions in which the new body might at once proceed to add to medical knowledge, and urged that it should also apply itself to ameliorating the material conditions of medical practice and improving the relations of practitioners with the State and with the public. The subject of professional organization, he said, "is closely connected with the advancement of science, for if the profession were constituted as it ought to be, and as reason and sound principles dictate, the harmony that would be thus established among the several departments could not fail to prove a direct means of their co-operating more cordially and efficiently in extending the science and improving the practice." Moreover, at a time when hygiene had scarcely dawned, and the ordinary doctor believed that his only duty was to cure the disease of the individual patient, Hastings showed his grasp of the idea that the grand function of the medical profession was to prevent disease among the public. Officers and a council were elected, and the meeting ended with a vote of thanks to Hastings "for the indefatigable trouble he has taken in forming a society which owes its existence to his suggestion, and for the able, eloquent, and learned discourse with which he has opened the proceedings of this day."

Acting upon the principles laid down by its founder, the Association at once addressed itself to questions affecting public health and the status of the medical profession in this country. An account of the work begun or accomplished in the early years will be found in Mr. Muirhead Little's *History of the British Medical Association*, which will be presented to all members who attend the Centenary Meeting next week, and from which advance extracts have appeared in these columns. At the time of the first Annual Meeting, held at Bristol in 1833, the membership was 316. When in 1849 the Association met for the second time at Worcester, under the presidency of the founder, its members numbered 1,760. From 1833 until 1853 (when, by an odd chance, the membership was 1,853) a volume of *Transactions* was published annually. Meanwhile, a step was taken of far greater importance, for in 1840 the Association began to publish a weekly periodical, the *Provincial Medical and Surgical Journal*, which in January, 1853, became the *Association Medical Journal*. About this time there grew up a feeling that the Association ought to widen its scope, and that it should be made to combine in name (as it had already begun to do in fact) medical men practising in all parts of the United Kingdom. Accordingly, in 1856, it changed its name to British Medical Association, and in 1857 its weekly journal, following suit, became the *British Medical Journal*.

In 1862 the Annual Meeting was for the first time held in London, the membership then being 2,120.

Twelve years later, with a view to the protection of its property, the Association became incorporated under the Companies Acts as a limited liability company "not for profit." In 1876 the membership reached 7,000, and a year later the first of many oversea Branches (the Jamaica Branch) was formed. In 1882 the Association celebrated its jubilee at Worcester. In 1902, the members then numbering more than 18,000, far-reaching changes were made, and the constitution under which it now lives was laid down. Divisions were created, and a central Representative Body, elected territorially by the Divisions, was called into being to act as the deliberative and legislative assembly of the Association—its parliament, so to speak—and the Council as then reconstituted became the executive. Thenceforward the work, both central and local, grew apace. A medical secretariat was established, and committees and subcommittees multiplied. The fine building that rose in the Strand twenty-five years ago proved far too small to house all these activities, and in 1925 the beautiful new headquarters in Tavistock Square were declared open by our Patron the King. The past seven years have seen further developments in many directions at home and over-seas. To-day, on the eve of its 100th birthday party, the British Medical Association, with 100 Branches and 250 Divisions and a membership of 35,000, stands before the world as an example of what professional organization can do in the service of medicine and the public.

THE RESULTS OF B.C.G. VACCINATION

Last year the Institut Pasteur of Paris published the results of a second inquiry into the effect of prophylactic vaccination with B.C.G. in France. The evidence presented in this publication, which was reviewed in our issue of August 22nd, 1931, was not convincing, insufficient care having been taken to study groups of control children comparable in every way with the vaccinated groups. There has now been issued a further report,[1] comprising results obtained in countries other than France. The greater part of this report contains data on the general and tuberculous mortality amongst vaccinated and non-vaccinated infants, and is open to the same criticism as that of the previous report. There are, however, certain figures which appear to have been collected with greater care and which deserve closer attention. It will be remembered that in 1925 Wilbert, working in French Guinea, obtained very promising results in the protection of monkeys with B.C.G. vaccine. Unfortunately, numerous subsequent workers in Europe failed to confirm his findings, and the results of Griffith in particular, in this country, were decidedly unfavourable. Wilbert has therefore repeated his experiments, again with striking success. A number of monkeys were inoculated subcutaneously or intramuscularly with 50 to 80 mg. of B.C.G. Four weeks later they were put, together with a similar number of control animals, into close contact with monkeys which had been experimentally infected with virulent human or bovine tubercle bacilli. As these monkeys died they were replaced by further infected monkeys, so as to maintain a constantly tuberculous environment for the experimental animals. At the end of about eighteen months the results were as follows: of eleven vaccinated monkeys five had been killed by their companions or had died of intercurrent disease; not a single one developed tuberculosis. Of eleven control monkeys every animal died of tuberculosis within one to seven months. These figures are small, but they do suggest that B.C.G. vaccination is able, in certain circumstances, to afford a considerable measure of protection against naturally acquired tuberculosis. The experiments carried out on cattle by Rankin in Alberta, Canada, have likewise been successful. Twenty-five newly born calves were injected subcutaneously with 60 mg. of B.C.G. Nine months later they were inoculated intravenously, together with twenty-three control animals of the same age, with 5 mg. of living virulent bovine tubercle bacilli. In the following four months one of the vaccinated animals died of tuberculosis, and when the remainder were killed at the end of this period of observation 80 per cent. were free from macroscopic evidence of tuberculosis. On the other hand, six of the control animals died of generalized tuberculosis, and with a single exception all of the survivors at the end of four months showed progressive caseating tuberculous lesions at necropsy.

Coming to the vaccination of infants with B.C.G., the figures collected by Baudouin at Montreal are of considerable interest. During the past six years two groups of infants, one vaccinated with B.C.G. and the other serving as a control, have been observed, both of them brought up in a tuberculous environment. Excluding the deaths during the first month of life, it was found that in the 1 to 12-month age group twenty-six deaths from all causes occurred amongst 341 vaccinated, and thirty-one deaths amongst 400 control infants, the general mortality rates being, therefore, 7.6 and 7.7 per cent. respectively. In the 1 to 4-year age group 4.2 per cent. of 337 vaccinated, and 6.4 per cent. of 393 control, infants died. The similarity in the general mortality rates is sufficiently close to indicate that the subjects in the two groups were probably more or less comparable. It is therefore of interest to observe that the death rate from tuberculosis amongst the vaccinated infants was 1.46 in the 1 to 12-month, and 1.48 in the 1 to 4-year age groups, while in the controls the corresponding figures were 3.7 and 3.8 per cent. In other words, the tuberculosis death rate was approximately two and a half times greater in the control than in the vaccinated group. Before drawing hasty conclusions, however, on the value of B.C.G., it is well to study more carefully the degree of exposure of the two groups to infection. Examination of the relevant tables shows that of the vaccinated infants 30 per cent. were in contact with definite cases of open tuberculosis,

[1] Vaccination préventive de la tuberculose de l'homme et des animaux par le B.C.G. Institut Pasteur, Paris. Paris: Masson et Cie. 1932.

while of the control infants as many as 58 per cent. were exposed in this way. It is not unreasonable, therefore, to suppose that the higher mortality from tuberculosis amongst the control group may have been associated with their greater exposure to infection. Another carefully documented series of figures has been collected by Sayé in Barcelona. Again a vaccinated and a control group of infants have been observed, some of the observations being continued for six to seven years. Each group is subdivided into three, according to the degree of infection to which the infants composing it were exposed. The results with each of the different groups exposed for different lengths of time are too numerous to quote; suffice it to say that both the general and the tuberculosis mortality rate were higher among the control than among the vaccinated infants. It is important to observe that the difference between the groups was greater with the tuberculosis than with the general mortality rate. Thus, among 528 vaccinated infants exposed to infection the tuberculosis mortality rate in the 0 to 1-year age group was 3.78 per cent., and the general mortality rate 11.55 per cent.; the corresponding figures for 446 control infants were 14.79 and 18.38 per cent. That is to say, while the death rate from all causes was 1.6 times as high in the control as in the vaccinated group, the death rate from tuberculosis was 3.9 times as high. Examination of the figures relating to the degree of exposure to infection shows no advantage in favour of the control group; the only information suggestive of a lack of comparability between the two groups is the statement that most of the control infants belonged to families followed up by the dispensary, leaving the inference to be drawn that a certain proportion, however, did not receive the close supervision which contact with a dispensary involves.

The importance of a right selection of control subjects is brought out most clearly by Park and his co-workers in New York. After working with B.C.G. for five years, restricting its application to infants brought up in a tuberculous environment, it has been realized that the control group has not been exactly comparable with the vaccinated group. Owing to the practical impossibility of obtaining two groups of children alike in every respect, Park has endeavoured to overcome the difficulty by an index system of classification in which the environmental factors likely to influence the resistance of the individual are assessed. The maximum number of marks awarded is 200, the lowest 0. Though such a system is open to objection on various scores, it does represent a real effort to avoid the uneven weighting in favour of the vaccinated subjects that has characterized most of the figures published hitherto. As not all the children in the control group were followed since birth, they have been divided into two subgroups, according to whether at the commencement of the period of observation they reacted positively or not to the intradermal tuberculin reaction. The results obtained by Park deserve detailed consideration. The actual records are given in multiple charts, in which the deaths among the different groups in different environmental conditions exposed for different times are graphically represented. To transcribe these into actual figures it has been necessary to work out for the different groups the precise number of months of exposure which each infant has experienced. These may be referred to as "infant-months." Taking the group with an index of 40 to 80, it is seen that among fifty-three Mantoux-negative controls four deaths, among thirty-three Mantoux-positive controls five deaths, and among twenty-four orally vaccinated infants one death from tuberculosis occurred. In these three groups the number of deaths from tuberculosis per 100 infant-months are 0.55, 0.75, and 0.31 respectively. In the group with an index of 80 to 120 the corresponding figures are 0.014, 0.099, and 0.032. Two very important facts emerge from these results. The first is that Mantoux-positive control children, in the early years of life, are more likely to die of tuberculosis than those who react negatively to tuberculin. The second is that a control child, whether Mantoux-positive or not, under more favourable environmental conditions is not so likely to die of tuberculosis as a vaccinated child in less favourable conditions. There is, indeed, evidence that on children in moderately favourable conditions vaccination confers no advantage, but the figures are too few to permit of this being stated with certainty. The summary which Park and his colleagues give is instructive: "After five years of research, and after analysing observations made on 307 children vaccinated with B.C.G. and 453 controls, we are convinced that vaccination with B.C.G. is inoffensive. As to the degree or the duration of its protective action we are not yet in a position to draw any definite conclusions."

The records contained in the publication of the Institut Pasteur are not easy to summarize. Analysis of the three most careful inquiries on human subjects yields very unsatisfactory and unconvincing results. It appears fairly certain that, if in any district a given number of infants are vaccinated and the subsequent mortality from tuberculosis among them is compared with that in unvaccinated infants, a definite advantage will be found in favour of the vaccinated group. The reason for this is not far to seek, depending mainly on the more favourable environmental and social conditions of those selected for preventive treatment. Probably a similar advantage, though not necessarily of the same degree, would follow the use of a killed vaccine of tubercle bacilli or of a non-specific vaccine. When, however, care is taken to ensure that the infants in the control group shall be really comparable with those in the vaccinated group, or when suitable allowance is made for the differences between them, as in Park's work, the advantage in favour of the vaccinated group is very much less apparent. The assessment of the value of B.C.G. vaccination on human subjects is no simple problem. In New York, or in any of the large towns of this country, the number of children brought up in tuberculous families who die of tuberculosis during childhood is so small that it would be impossible for a single observer to obtain an answer within a reason-

able time. When we remember that in the year 1930, for example, the total number of deaths from tuberculosis in the first five years of life for the whole of England and Wales was only a little over 2,000, it is obvious that if any inquiry is to be carried out it will have to be on a very large scale, so as to obtain sufficient numbers of deaths to yield significant figures for analysis. More hopeful would be an investigation in a country or district in which the death rate from tuberculosis is high. Failing this we are driven back to animal experiments. In this field there is still ample scope for careful inquiry. Cattle are probably the most suitable animals, and any investigation that is carried out should be one in which both the vaccinated and the control animals are submitted to risk of infection by natural means over a considerable number of years. Experimental inoculation with living bacilli as a test of resistance is not satisfactory, since it by no means follows that an animal which is capable of withstanding an experimental infection will necessarily withstand infection under natural conditions. In view of the immense wastage among cattle due to tuberculosis, is it not time that a serious attempt under Governmental direction should be made to ascertain the real value of B.C.G. vaccination?

AN IRISH MEDICAL CENTENARY

The coincidence of the centenaries of the *Irish Journal of Medical Science* and of the British Medical Association (both of which have altered their titles more than once in the course of their first century "not out") is a happy illustration of the unity of science and of the absence of tariff walls in medicine. The June number[1] celebrates the centenary of that periodical, which has been edited for the last seven years with scholarly charm by Mr. William Doolin, and also the fiftieth anniversary of the foundation of the Royal Academy of Medicine in Ireland, which twelve years ago became linked with the *Irish Journal of Medical Science*, since then its official organ of publication. This commemorative number is occupied by ten contributions from honorary Fellows of the Academy of Medicine in Ireland, who hail the occasion from very various and distant parts of the world. George Crile of Cleveland, Ohio, writes on the modern treatment of hyperthyroidism, and the reader cannot but be thus reminded of R. J. Graves, W. Stokes, and Sir Henry Marsh of the great Dublin school who near a hundred years ago helped to establish the recognition of exophthalmic goitre. Dr. E. Essen-Möller of Lund, Sweden, gives an account of that rare old Irish work, the *Speculum Matricis Hybernicum, or the Irish Midwives Handmaid, catechistically composed* by James Wolveridge, M.D., who was a graduate of Dublin and practised at Cork; published in 1670 this appears to be the third of the oldest books in English on obstetrics. Professor J.-L. Faure of Paris writes in French on the treatment of cancer of the cervix uteri, and Professor Oskar Frankl of Vienna on adenomyosis uteri. Out of the fullness of half a century's experience Dr. E. Hastings Tweedy supplies much interesting information about the changes during that period at the famous Rotunda Hospital, which (as Professor Munro Kerr of Glasgow points out in his article on advances in obstetrics and gynaecology in the past fifty years) has contributed so much to the progress of this branch of medicine. Sir Robert Jones does far more than, as he humbly says, "touch lightly upon certain fractures about the shoulder" in his illustrated article. The historian of Irish medicine, Dr. T. P. C. Kirkpatrick, who is registrar of the Royal College of Physicians of Ireland and general secretary of the Royal Academy of Medicine, supplies two essays full of attractive detail. The first, which appropriately opens the ball, gives a review of the Dublin medical journals dating from 1800; it contains thumb-nail sketches and portraits of the editors, among whom Graves, Sir Robert Kane, and Sir William Wilde (father of Oscar Wilde) were early in the field, and the late Professor James Little and the veteran Sir John William Moore, who during his forty-seven years of devoted service prepared ninety-four volumes of our contemporary for publication, are held in warm affection by the living. The other article, by Dr. Kirkpatrick, is his address on that many-sided man Sir William Petty, delivered at the jubilee celebration of the Royal Academy of Medicine on May 28th last. The editor must be warmly congratulated on this fine number, and gently chided for his modesty in not writing more than the introduction.

[1] *The Irish Journal of Medical Science: the Official Journal of the Royal Academy of Medicine in Ireland.* Edited by William Doolin, June, 1932, sixth series, No. 78. Dublin: Cahill and Co., Ltd. (2s. 6d.)

HOW IT STRIKES AN ONLOOKER

A readable article on the British Medical Association appears in the July number of *Great Thoughts*. Its author, the Rev. Alfred J. Edmonds, has an eye for picturesque moments in history, and calls up very pleasantly the "animated scene which greeted Dr. Hastings as he entered the board room of Worcester Infirmary that July morning a hundred years ago." He shows, too, a good working acquaintance with the condition of the medical profession in 1832 and the many abuses which at that time brought the healing art into disrepute. With fluent pen he sketches the growth of the Association from small beginnings, until, once established, it spread like a tropical vine; and his examples of the manifold activities and achievements of the Association are well chosen. "That the medical profession is the highly trained and closely co-ordinated thing it is to-day," he writes, "is largely due to its efforts. Both the Acts of Parliament, that of 1858 and 1886, upon which medical training and practice are now based, are in the main its fruit. Gone are the days when the Poor Law doctor was starved and humiliated by ignorant guardians, and if public infirmaries are now equal in equipment and *personnel* to any average voluntary hospital, it is in no small measure due to the agitations of the B.M.A." Public tributes to our Association as a social force will be paid next week by distinguished laymen. Nevertheless, we may quote here Mr. Edmonds's closing passage, because it expresses the view of an onlooker who (so far as we are aware) has no reason to pay compliments.

"The many problems of a medico-social character that will arise in the immediate future will require all the cleverness and good will at our command to solve them. It is highly satisfactory, therefore, that there should be

an organization like the B.M.A., which so effectively consolidates and voices the opinion of the profession. That it has immense power is obvious, but its history proves that that power is used on the whole for altruistic ends. Though it has made mistakes, its judgements are often surprisingly unselfish. Some of the best brains of the profession are on its committees. It stands in a unique position between the public and the State on all matters affecting the health of the people. Again and again it has intervened, not merely to safeguard the rights of its members—with which aim no sensible person will quarrel—but also to put down abuses and to ensure for one and all the best medical service it is possible to obtain. And we may be certain that that spirit will animate it still. For Sir Charles Hastings is not dead; his spirit marches on in the Association he founded a hundred years ago."

INFRA-RED PHOTOGRAPHY

Photographic chemists have been trying for over twenty years to make an emulsion sensitive enough to the invisible infra-red rays for practical photography. In general, the method has always been to devise a dye-stuff which has an absorption band in the region of the spectrum for which it sensitizes the emulsion. This is not, however, an easy matter. Many promising chemical substances utterly fail to sensitize the emulsion for their appropriate band; many others do so satisfactorily, but sensitize it over the whole spectrum so seriously that they are useless. Messrs. Ilford Ltd. have recently produced a new dye which, so far as we know, has not yet been allotted a name, but which will give very much faster and cleaner plates than any made hitherto. The emulsion, in fact, is nearly one hundred times as fast as neocyanine. Mr. Olaf Bloch, the president of the Royal Photographic Society and the head of the chemical research department at Messrs. Ilford, explained the use of the new dye in a paper read before his society on April 12th. He pointed out that there are two main methods of using infra-red sensitive material: one is to photograph bodies illuminated by artificial infra-red light, and the other is to use an ordinary camera equipped with a filter that will cut out all the natural light above about 7,500 Angström units. To demonstrate the possibilities of the first method he photographed his audience by the all but invisible light of a battery of powerful electric bulbs passed through a filter, and, thanks to the practical facilities available, showed an impeccable lantern slide about an hour afterwards. He suggested that banks might fit their strong rooms with a battery of infra-red lamps and a silent cinematograph camera to photograph any thief who might break in, and in a letter to the *Times* he says that the method is even being applied to research in spiritualistic phenomena. Presumably he does not mean that "controls" or other spirits are visible by these rays, but that the method may be used to keep a check on fraudulent practices. The use of infra-red photography by filtered daylight offers an even wider field. The *Times* staff photographer has been producing some extraordinary results in the long-distance photography of landscapes, which, owing to atmospheric moisture, were almost or quite invisible to the naked eye. Infra-red rays penetrate without difficulty a thickness of mist which will break up all visible beams. The photographs include a view of the French coast from Dover, the mountain country north of Stirling, the Isle of Arran from the coast of Ayrshire, the Isle of Man from the mainland, and the Welsh hills from the Wrekin, above Shrewsbury. Intimate detail is visible in country fifty miles away; the trees and grass appear a brilliant white, like snow, because of their high power of reflecting infra-red rays. The method is being extended to ground photography from aircraft, and it is easy—especially for those who served in the artillery in the war—to imagine the immense improvement which may be effected in aerial surveying. Fabrics vary very much in their capacity to reflect these rays, and on this obviously depends their comfort to the wearer in hot weather; the infra-red plate will distinguish readily between cool clothing and hot. Similar differences can be detected in stonework and in plant and animal tissues—for example, in the skins of persons of various races. Astronomy offers another possible field. A suggested medical use of the plate is the photography of thin tissues transradiated by strong light and acting as infra-red passing filters. The *British Journal of Radiology*,[1] in an editorial on the new process, makes the facetious comment that the method may ultimately put radiologists out of business by introducing a new and competitive skiagraphic system, but doubtless the prospect of this disaster is remote. It is possible, though, that valuable results may be obtained from the different reactions of the infra-red plate to tissues in different states of health and disease, but at present the investigation is only in its infancy. The exposure is still rather long. The *Times* photographer, using a first-class Cooke anastigmat telephoto lens specially corrected for colour photography, gives about half a minute, but Mr. Bloch hopes that further research will make it possible to produce much more sensitive emulsions by modification of the present dye. He also hopes to improve the filter; like all filters containing dyes it is not sharp-cut, and the problem is to narrow the transmission of the filter—which at present means increasing the concentration of the dye—without making it more opaque.

STRYCHNINE POISONING IN THE U.S.A.

A recent article on strychnine poisoning in the *Journal of the American Medical Association* presents several points of interest. In the first place it reveals a curious difference between the United States and this country as regards the frequency of such poisoning. Strychnine was reported to be the cause of 546 deaths in the three years 1926–8 in the States, whereas the annual report of the Registrar-General for England and Wales for 1930–1 gives only four cases of suicide and seven fatal accidents as due to strychnine and its preparations. The yearly incidence of deaths from strychnine per million inhabitants is therefore nearly ten times as great in the United States as in this country. The worst feature of the prevalence of this form of poisoning in the United States is that it is responsible for about one-third of the accidental poison deaths in children under 5 years of age. This is attributed to the popularity of "tonic" tablets, which contain strychnine as a concession to the polypharmacal shotgun era, and the American Medical Association is considering the possibility of restricting the sale of this violent poison in the guise of supposedly harmless household remedies. Children are usually thought to be relatively tolerant of strychnine, but Kobert states

[1] *Brit. Journ. Radiol.*, 1932, v, 484.

that there are many examples of children with normal hearts being killed by doses of 4 to 5 mg. (1/16 grain). In this country all preparations containing 0.2 per cent. or more of strychnine fall within the regulations under Part I of the Poisons and Pharmacy Act, and this may be presumed to be the reason for our relative immunity to poisoning from this drug. Recent work in America has resulted in the discovery that a considerable protection against strychnine poisoning can be obtained by the intravenous injection of barbiturates. Barlow[1] actually succeeded in protecting rabbits from more than seventy times the usual lethal dose of strychnine by injecting large quantities of sodium phenobarbitone intravenously. He suggested that for clinical purposes one-tenth of a grain of sodium barbitone per pound body weight should be given as a first injection, and one-half this dose whenever convulsions recurred. Other authors have reported recovery from severe strychnine poisoning in patients treated with intravenous injection of soluble barbiturates. The anti-convulsant efficiency of the barbiturates has already become well established in the treatment of cocaine poisoning, and this work suggests a new application for these useful drugs.

VICTOR HORSLEY MEMORIAL LECTURE

The fourth Victor Horsley Memorial Lecture was delivered in the medical school of University College Hospital on July 20th by Dr. E. D. Adrian, F.R.S., Foulerton Professor of the Royal Society, with Mr. Wilfred Trotter, F.R.S., in the chair. The lecture dealt with the action of the visceral sense organs, particularly those in the lungs and the great blood vessels. This can be studied by recording electrically the nervous messages which they send to the brain stem. The sense organs in the lung give a rhythmic discharge of impulses as long as the tissues are stretched. In normal breathing the discharge only occurs at inspiration, but there are some endings which react to collapse of the lung and give a quickened rate of breathing. The sense organs in the aorta and sinus caroticus behave like those in the lung ; as with all sense organs, their reflex effect depends upon messages which are graded by changes in impulse frequency as well as in the number of units in action. The lecture was illustrated by gramophone records, in which the nervous messages were converted into sound to show the effect of changes in the blood pressure and in the depth of respiration.

HELEN KELLER, LL.D.

Full information about the twenty-four Scientific Sections at the Centenary Meeting was published in our *Supplement* last week. The Section of Oto-laryngology has evidently designed its programme with the object of interesting the general medical public, and of showing the close bonds of necessary co-operation between this specialty and the republic of medicine. Thus the subject of " Otitis media of sucklings " deals with a matter in which the family physician, the obstetrician, or the paediatrist is the first to be consulted. The "end-results of the tonsil and adenoid operation " are very much *à l'ordre du jour*, and concern a matter of general and social interest. The discussion on " Intrathoracic new growth " deals with a serious disease which appears to be on the increase in many countries. But the item in a well-planned programme which is sure to arouse most general interest is the presentation to the Section, by Dr. Kerr Love of Glasgow, of his friend Miss Helen Keller, LL.D. This lady at the age of 19 months became blind and stone deaf, and has remained so to the present day. At the age of 7 she was still dumb. She learned to speak at the age of 10. At the age of 13 she learned French and Latin. When 17 she studied physics, algebra, geometry, and astronomy. Swimming, rowing, and bicycling are some of her accomplishments. Yet she is still blind and absolutely deaf. This remarkable lady, and her equally remarkable teacher Mrs. Macy, have kindly consented to give a demonstration in the Section of Oto-laryngology on Wednesday, July 27th, at noon.

[1] Barlow, O. W.: *Journ. Amer. Med. Assoc.*, June 4th, 1932.

DR. JOHN STEWART OF HALIFAX

An article in the *Canadian Medical Association Journal* for June, by Dr. A. Stanley Mackenzie, records the resignation of Dr. John Stewart from the post of dean of the Faculty of Medicine in Dalhousie University. Dr. Stewart, " the most notable figure in the medical life of Nova Scotia for fifty years," was born in 1847. He began his medical studies in Dalhousie University and went to Edinburgh to complete them, graduating M.B., C.M. in 1877. While in Edinburgh, as many of our readers know, he won the regard and confidence of Lister, whose house-surgeon he became, and with whom he went to London. After a year in London he returned for family reasons to his native province as an apostle of the new antiseptic surgery.

" On the outbreak of the war, at a time when Dr. Stewart was verging on the age when most men think of coming retirement from strenuous life, he volunteered his services in the field, and went over as commanding officer of the No. 7 (Dalhousie) Stationary Hospital Unit. On his seventieth birthday anniversary he was honoured by his Sovereign reviewing the unit in France. He was appointed in March, 1918, consulting surgeon at headquarters. He was made a C.B.E. for his distinguished service. On his return from overseas Dr. Stewart was appointed dean of the Faculty of Medicine, and no small share of the great progress of the school since that time is due to his wisdom in its direction, and to his counsel and experience. . . . Dr. Stewart retires from a long active participation in professional and educational life with every mark of admiration, regard, and honour which his fellow countrymen can accord him."

Dr. Stewart played a prominent part in the Lister centenary celebrations in Edinburgh exactly five years ago during the Annual Meeting of the British Medical Association. In 1930, when the Association met in Winnipeg, he took the chair on the occasion of Lord Moynihan's Listerian Oration.

The presentation of Dr. Alfred Cox's portrait to the British Medical Association, and of the Presentation Book and cheque to Dr. Cox on his retirement from the post of Medical Secretary, will take place to-day (Saturday, July 23rd) at 3.30 p.m. in the Great Hall of the Association's House in Tavistock Square.

At the quarterly meeting of the Council of the Royal College of Surgeons of England on July 14th, Sir Holburt Waring was elected president in succession to Lord Moynihan, who has held office for the past six years.

Sir Charles Hastings

The purpose of the British Medical Association has not changed in the hundred years of its existence, though the means it uses to attain this purpose have developed and expanded. There can be no doubt that Charles Hastings and the provincial physicians and surgeons who gathered round him at Worcester on July 19th, 1832, would have been in full sympathy with the aims and objects of the Association to-day.

The founder and first secretary of the Association was born on January 11th, 1794, the sixth son of the Rev. James Hastings, Rector of Bitterley in Shropshire. A full account of Sir Charles Hastings's career and of the circumstances of the founding of the Association at Worcester on July 19th, 1832, is given by Mr. Muirhead Little in his *History of the Association*, from which advance extracts have appeared at intervals in these columns during past months. It has generally been believed that our founder's birthplace was at Ludlow, but as will be seen from Mr. George Morgan's interesting note published at page 164 this week, there are reasons for supposing that he was in fact born at Bitterley Rectory, from which his father removed to Martley in 1795.

SIR CHARLES HASTINGS

Immediately after graduating in medicine at Edinburgh in 1818, Hastings was elected physician to the Worcester Infirmary and held that post for over forty years, and thus it came about that the birthplace of the great organization he founded was the board room of that hospital. He soon became, and for long remained, the leading physician in Worcestershire and in the neighbouring counties. In 1828, with the assistance of personal friends, he founded the *Midland Medical and Surgical Reporter*, and from this movement arose the Provincial Medical and Surgical Association, the centenary of whose birth we now celebrate. The last number of the third volume of this quarterly journal, dated May, 1832, contained a notice of the termination of the work and the proposed formation of a medical association. This notice signalized the crystallization into action of the ideas which Hastings and his associates had so long fostered.

Probably the most important decision the Association ever took was when in 1856 it resolved to change its name to British Medical Association. With the old title it could never have become the all-embracing institution it is to-day, carrying its organization, directly or indirectly, into every part of the British Empire. Hastings had resigned the secretaryship in 1843, but lived for ten years after the change of name, as permanent President of Council and treasurer. He received the honour of knighthood in 1850.

While still "provincial" in name, the Association had done a great deal of valuable work for the advancement of clinical medicine and the ancillary sciences, and also for the betterment of sanitary conditions in the new industrial era, and it had persistently sought for reform of the Poor Law. This was work for the whole of Great Britain, but without perhaps fully appreciating what it was about the Association had embarked on a still wider field. It had long been urging Parliament to establish a *Medical Register* to which should be admitted only those who had fulfilled certain conditions, the chief of which was that the applicant should produce evidence of having attained a certain standard of education by passing through a curriculum prescribed by the universities and medical schools. This *Register*, during the transition period when the Dominions and Colonies were growing to nationhood, was Empire-wide. When the General Medical Council was first set up under the Medical Act of 1858 Sir Charles Hastings was one of the four members appointed by the Crown on the advice of the Privy Council. His colleagues as Crown nominees were Sir James Clark, Sir William Lawrence, and Mr. T. Pridgin Teale. He served from November, 1858, to November, 1863.

At the Annual Meeting of the Association held in Liverpool in 1839 a portrait of the Founder painted in oils by Benjamin Rawlinson Faulkner was presented to his wife. From this portrait the obverse of the Hastings medal and the familiar medallion on the outer cover of the *British Medical Journal* are taken. A copy of the engraving from it is in Martley Rectory, and another, signed by Hastings, is in the British Medical Association House in London. On Sunday next, on the occasion of the Centenary Pilgrimage to Worcester, the original portrait will be handed over to the British Medical Association by Dr. Neville Crowe, Chairman of the Worcester Division, whose father, Dr. G. W. Crowe, one of the oldest members of the Association, was honorary secretary of the Jubilee Meeting in 1882. A later portrait hangs in the Victoria Institute public library and museum at Worcester; it was a gift from Susanna Holyoake to the Worcestershire Natural History Society. A marble bust by Sir Thomas Brock, R.A. (reproduced on this page), was presented by the Association to the City of Worcester at the Jubilee Meeting and placed in the Victoria Institute library.

Sir Charles Hastings died at Barnard's Green, near Malvern, on July 30th, 1866, aged 72. His grave, with that of Lady Hastings, is in Astwood Cemetery, Worcester. Above it is a white marble cross on a red granite base which bears the following inscription:

"In memory of Sir Charles Hastings, Knight, M.D.Edinburgh and D.C.L.Oxon. Honorary Physician during forty-one years of the Worcester General Infirmary. Some time member, By Her Majesty's appointment, of the General Medical Council of the United Kingdom. Founder of the British Medical Association, and for ten years Honorary Secretary. For twenty-four years President of the Council, and in the year 1849 President of that Society. President of the Worcestershire Natural History Society, and official of the Geological Society. Born January 11th, 1794. Died July 30th, 1866."

"Also of his wife, Hannah, Lady Hastings, daughter of George Woodyatt, and born May 20th, 1790, died March 21st, 1866."

On the kerb round the grave of the Founder and his wife is carved:

"Pleasant in their lives and in their death they were not divided."

The issue of this marriage was two daughters and a son, Mr. G. W. Hastings, who was for some years member of Parliament for East Worcestershire and acted as adviser to the Association on matters of medical reform. At the Jubilee Meeting he gave an interesting account of his father's career.

[The photograph of the bust is reproduced by permission of the Committee of the Hastings Museum, Victoria Institute, Worcester.]

B.M.A. HOUSE, LONDON. COURT OF HONOUR AND MEMORIAL GATES

THE ASSOCIATION'S HEADQUARTERS IN LONDON

(With Coloured Plate)

Bloomsbury is a region rapidly coming into its own once more after many decades of comparative neglect, and the direct route from Kingsway to King's Cross is one which grows year by year in importance. Towards the northern end of this route, at the north-east corner of Tavistock Square, stands the House of the British Medical Association, which was formally opened by its Patron, the King, on July 13th, 1925, in the presence of perhaps the most representative gathering ever brought together in the name of British medicine.

The new building, of red brick with white stone facings, had been completed up to a certain point when it was taken over by the Government during the war. It was acquired by the Association in 1923 from the Disposals Board, the lease from the trustees of the Duke of Bedford's estate being for 200 years. The outside had to be completed and a great deal of work was necessary to the interior before it could be fitted, under the direction of Sir Edwin Lutyens, R.A., to the purposes of the Association. A further advantage of the Tavistock Square site was the fact that it provided space for the erection of additional premises. In acquiring the new house the prudent course was followed of obtaining control of the sites at that time occupied by houses lying between the building opened by the King and the main thoroughfare.

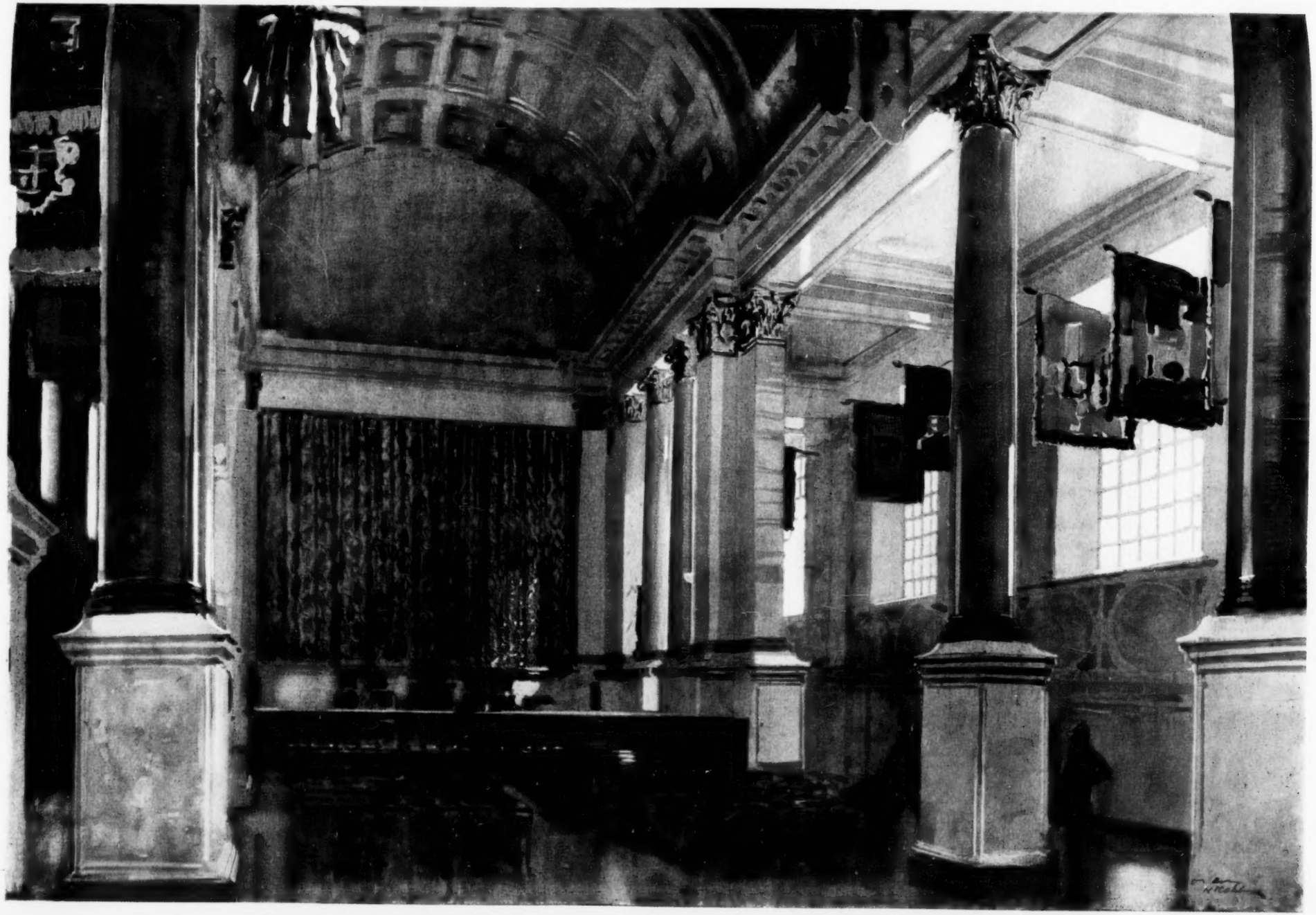
THE GREAT HALL

The lofty windows of the principal block, flanked by Corinthian columns, admit an abundance of light to the Great Hall—an imposing room, approximately a double cube, one hundred and thirty feet long. The roof above this assembly hall is supported on semicircular arches of light steel framing, which remains uncased except at each end, where one bay is surmounted by a painted vault moulded to the shape of the arches behind it. The whole roof structure is supported within upon two rows of Corinthian columns, whose shafts are painted to appear as though carved out of some brilliant peacock-blue marble. At the north end of the hall is a dais, and at the south a gallery ; running from end to end at the lower level of the roof is an ambulatory connecting the third floors of the north and south wings of the building. The colour scheme is rounded off by two double rows of flags—the standards of the British Dominions above, and beneath them silk banners bearing the arms of towns and cities in which the Association has held its Annual Meetings. The whole effect is most striking and unusual, as may be judged from the reproduction of the water-colour drawing on our special plate this week.

MAIN BLOCK AND COURT OF HONOUR

A full description of the main building, illustrated with photographs and plans, appeared in the *British Medical Journal* of July 18th, 1925. Here we have space only for the briefest outline.

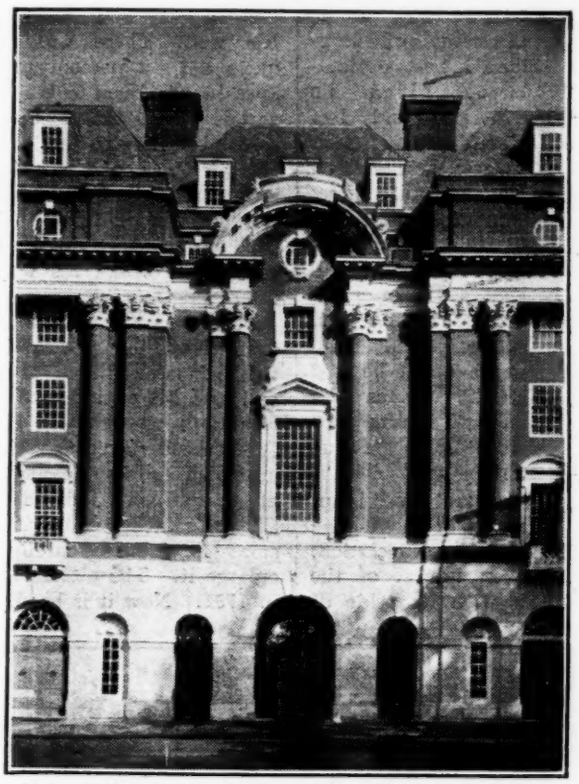
The open quadrangle, or Court of Honour, was designed by Sir Edwin Lutyens in sober and austere mood ; it is completed by Memorial Gates of wrought iron, made by the Birmingham Guild to the design of the architect. These gates of remembrance, founded on the choicest examples of eighteenth century work, are surmounted by a bronze shield bearing on either side a legend lettered in gold: in front " Memory and praise,"



THE GREAT HALL, BRITISH MEDICAL ASSOCIATION HOUSE, TAVISTOCK SQUARE, LONDON.

behind "Faithful hath been your warfare." They were erected by the Association as a tribute to the 574 of its members who fell in the war, and they were dedicated on the opening day by the late Archbishop of Canterbury, Lord Davidson.

Centrally below the Great Hall there runs an archway, which connects the Court of Honour entrance with that in Burton Street. Approaching this vestibule from the courtyard there will be found on the left the Hastings Hall and committee rooms, panelled in rare Spanish mahogany transferred from the former house of the Association at 429, Strand. On the right is the Members' Common Room, a spacious apartment with tall french windows overlooking the courtyard. Below these rooms are large basement offices. The windows of the Common Room and Hastings Hall are repeated in the façade of the north and south wings, which house, respectively, the Association's Library and the Council Chamber. The floor of the Council Chamber—several feet below the ground level—rises in tiers facing the platform, and on these tiers are rows of seats upholstered in green leather.



BRITISH MEDICAL ASSOCIATION HOUSE. MIDDLE OF FAÇADE ON TAVISTOCK SQUARE

The building which was opened by His Majesty seven years ago covers 18,000 square feet, and has a total floor space of 50,000 square feet. On its north it is flanked by a modern utilitarian garage (now approached from the forecourt by an archway), on its south by the Council's garden, whose swept-wall springs from the old foundations of Tavistock House, where Charles Dickens lived and worked from 1851 to 1860.

On the first floor of the north wing, over the Library and book store, are the general offices concerned with the business of publishing, subscriptions, and advertisements; on the second floor is further accommodation for the Finance Department; on the third floor is the Editorial Department, and above this, on the fourth floor, is the printing office, with typesetting machines, compositors' cases, and rooms for proof-readers.

The first floor of the south wing, over the Council Chamber, contains several fine committee rooms, and the two floors above are allocated to the Medical Secretary's Department.

FORECOURT AND FRONT BUILDING

"The new headquarters building was not long to be left in its dignified retirement at the end of Tavistock Place North." In January, 1928, the private roadway and pavements leading from Tavistock Square were closed for traffic; the houses at each corner of the roadway were then demolished, and the work of excavation began. In the summer of that year rapid progress was made with the laying of foundations and the erection of steel framework for the new buildings, and the whole structure was practically complete by the summer of 1929. This extension of the Association's headquarters, designed by Mr. C. Wontner Smith, F.R.I.B.A., comprises a wide façade on Tavistock Square, pierced by archways for carriage and foot traffic, and a forecourt whose wings join up with the wings of the main block, thus converting the quadrangle into a closed court. The new forecourt and the Court of Honour, with the Memorial Gates separating them, make up together a most harmonious whole, the fresh green of the central grass plot setting off the quiet tones of red and white and grey of the buildings and roadways and the delicate black tracery of the gates.

THE WORCESTER PILGRIMAGE

On Sunday, July 24th, there will be a Pilgrimage to Worcester. The special train leaves Paddington at 8.40 a.m., arriving at Foregate Street Station, Worcester, at 10.50. The first ceremony will be the unveiling at 11 a.m. by Dr. W. G. Willoughby (President of the Association, 1931-2) of a tablet on the wall of No. 43, Foregate Street, the house formerly occupied by Sir Charles Hastings, founder of the Association. Members will then robe in the College Hall, adjoining the Cathedral, and assemble at the Guildhall in High Street, from which the procession to the Cathedral will start at 11.45 o'clock. The Cathedral service begins at noon. The sermon will be preached by the Bishop of Birmingham, and during the course of the service a window in memory of Sir Charles Hastings will be unveiled by the President, Lord Dawson of Penn. High Mass for Roman Catholic members will be celebrated at 12 noon in St. George's Catholic Church, Sansome Place. After the religious services luncheon will be served in a marquee on College Green, adjoining the Cathedral; Dr. Neville Crowe, chairman of the Worcester Division, will preside, and will hand over to the Association the original of the portrait of Sir Charles Hastings, painted by Benjamin Rawlinson Faulkner in 1839. From 3 o'clock the Mayor of Worcester will hold a reception in the Guildhall, to which all those attending the Pilgrimage are invited. There will also be excursions during the afternoon, to Droitwich Spa, to Besford Court Catholic Mental Hospital and Training College, and to the Worcester Royal Porcelain Works. The return train to London will leave Foregate Street Station at 5.30 p.m., arriving at Paddington at 8.18.

CHARITIES MEETING

A meeting in connexion with medical charities will be held at the Association's House, Tavistock Square, on Monday, July 25th, at 3 p.m., under the chairmanship of Sir Thomas Barlow, Bt., president of the Royal Medical Benevolent Fund. The object of the meeting is to bring the claims of the great charities of the profession to the notice of members attending the Centenary Meeting, and to invite suggestions as to any possible new lines of work. A cordial invitation to be present is extended to all interested in any of the medical charities.

The Founder's Birthplace

BY

GEORGE MORGAN, F.R.C.S.ED.

CONSULTING SURGEON, ROYAL ALEXANDRA HOSPITAL FOR CHILDREN, BRIGHTON

NORMAN FONT, BITTERLEY CHURCH, 1913

SHROPSHIRE, home of some of England's best agriculture, gives us minerals, and has given us men: men of action, like Lord Clive of Indian fame; men of science, like Charles Darwin, most patient and accurate of observers, most logical of reasoners. And much could be said of the divines and men of letters who were born "Proud Salopians."

But it is not of great Salopians in general that I am thinking now; it is of Charles Hastings, Knight, the revered founder of our British Medical Association. Ludlow was my headquarters during my quest of the birthplace of this great man; Ludlow with its pride of position and its imposing castle. Without doubt one of Shropshire's most picturesque towns.

From Ludlow, about four and a half miles in a north-westerly direction, lies Bitterley Rectory, Sir Charles Hastings's birthplace; and nearly another mile in the same line is Bitterley Church. Near by, and looking down on the church and village, is Titterstone Clee, rising to 1,700 feet or more—a mass of volcanic rock, some of which has found its way into many of the towns and villages of England on account of its superior road-making qualities. A little farther away, in a northern direction, and rising still higher, is "Brown Clee," a favourite hunting ground for the mycologist. An archaeologist would have much to say about the church, for it is obviously old and full of interest. What struck me most was the font, over 800 years old; and the old oak chest, over 6 feet long, with its massive hinges and rusty padlocks. This chest takes up a good part of the middle aisle. I should say that it is one of the oldest pieces of oak-work anywhere to be seen, and possibly was made of the sessile oak, which has died out in many parts of England, but is still found in that part of Shropshire.

BITTERLEY RECTORY, SHROPSHIRE

It was in October, 1791, that the Rev. James Hastings, father of Charles, came as rector to Bitterley, and he left at the end of 1795 to take up his new appointment at Martley in Worcestershire.

The Hastings family, a big one even for those days, would have been considered a very big one in these. There were eleven children, and they were no weaklings, as sometimes is the case in so large a family. They all grew up fit and strong, and fulfilled their mission in life well. There was one centenarian in the eleven, quite a good percentage in those days, or in our own. Miss Joanna lived to the age of 104. She died at Malvern, and is buried there. Sir Thomas Hastings, Sir Charles's eldest brother, gained a knighthood for his work in the Navy. He became captain of the gunnery school, and afterwards superintendent of the Royal Naval College at Portsmouth. He died in 1870, aged 80. Francis Decimus became an Admiral of the Fleet. And so one might continue working his way through the members of this interesting family.

Such was the physical and home environment of the founder of the Association, and into this goodly company, this veritable school of young folk, each with his own will and his own mental outlook, Charles, the sixth son, was born on January 11th, 1794, at Bitterley Rectory. It has been stated that Sir Charles was born in one of the hotels of Ludlow, owing to the condition of the rectory at that time. This is most likely inaccurate. When Charles's father came as rector he found the rectory too small for his big family, and he proceeded at once to enlarge it. The alteration and additions were commenced in 1791. Now it is hardly likely that the additions would be allowed to drag on for three years. I believe it is a fact that one child was born at Ludlow, but it was not Charles. Charles, I feel sure, was born in the large bedroom in the commodious and beautiful rectory of Bitterley. I myself have seen the entry of his baptism in the parish register kept in the old chest. This was witnessed by Thos. Gwyn, curate.

Charles, a small boy of less than two years, left Bitterley and was taken across the border into Worcestershire at the end of 1795. He started school life at Martley in the old school, which at that time was a half-timbered house, since pulled down. It stood in the churchyard, and was virtually a grammar school. I am told by Sir Charles's grandson, Mr. W. G. W. Hastings, that he remained at work at Martley for some years, and if there was any interval between this school and his apprenticeship at Stourport it was spent at a private school at Worcester. But this is not certain. He left school to be apprenticed to a firm of surgeons and apothecaries at Stourport; and Stourport Church speaks eloquently from a brass tablet of the worth and influence of one of his masters. After a few months' study in London, and with no qualification, he was, at the age of 18, appointed house-

surgeon to the Worcester County Infirmary. Under the direction of Dr. Watson Phillips, one of the physicians to the hospital, he made numerous experiments on the nervous system. In 1815, when he was 21 years old, he entered Edinburgh Infirmary, where he continued his work on experimental physiology and microscopy in medical research. He graduated M.D. in 1818, and was at once appointed physician to the Worcester Infirmary, and for many years was the leading practitioner in that city.

At this point I should like to express my sincere thanks, and the thanks of the Association, to the members and friends of Sir Charles Hastings's family for their exceeding kindness in giving so generously of their time and in furnishing me with so many important facts: the Rev. F. G. Shepherd, M.A., the rector of Ludlow, Prebendary Burton, M.A., the rector of Bitterley, and Mr. W. G. W. Hastings.

The founding of the British Medical Association has been described by another pen. I will only complete what I set out to do, to give a full-sized portrait of this great man. He was a vigorous, active-brained, generous-hearted man, fond of work, and held high ideals of his chosen profession. Being a member of a large family he learned early to think of and to consider others, and the same spirit helped him to found the British Medical Association. I am told that the study of geology and natural history was his chief hobby and recreation; nor are we surprised at this, considering the nature of his surroundings during childhood and youth — a land furnishing many fossils, ferns, and fungi, and abundance of wild flowers. He wrote on the geology and natural history of Worcestershire, and especially on the Malvern Hills, and he largely developed the Worcester museums. He took a great interest in politics, and was strong on the Liberal side. He was deeply interested in the sanitary question, and was a president of the Public Health Section. He married in 1825 the eldest daughter of Dr. George Woodgate, by whom he left an only son, G. W. Hastings, M.P. for East Worcestershire in 1880 and following years, and two daughters. He died on July 30th, 1866, aged 72.

CHARLES HASTINGS, 1847

From the oil painting presented to the Worcestershire Natural History Society. Reproduced by permission of the Committee of the Victoria Institute Museum, Worcester.

May I add that the knowledge that I have seen a patient of Sir Charles Hastings gives me both pleasure and pride? The mother of Prebendary Burton's wife was attended by Sir Charles when the babies came, and I am pleased to say that at 87 she, like her husband, is only aged in years, not in tissues or outlook.

Centenary Meeting: Oversea and Foreign Guests

We print below the names of oversea representatives, delegates, oversea representatives of kindred bodies, and foreign guests who will be attending the Centenary Meeting, with their temporary addresses in this country.

Name	Home Address	English Address
Dr. Maude Abbott ...	Canada	C/o Dr. Helen Ingleby, 33, Cromwell Road, Kensington, S.W.
Major H. G. Alexander, I.M.S. (and Mrs. Alexander)	India	C/o Manager, Lloyds Bank Ltd., 125, Oxford Street, W.1
Dr. A. Lloyd Anderson...	Canada	C/o London House, Caroline Place, Guilford Street, W.C.
Dr. Carlos de Silva Araujo (and Madame Araujo)	Brazil	64, Romford Road, Stratford, E.15
Professor Ludwig Aschoff	Germany	C/o Sir Charlton Briscoe, 30, Harley Street, W.1
Dr. A. T. Bazin	Canada	Savoy Hotel, London
Dr. Mary V. F. Beattie ...	British West Indies	C/o A. C. Richmond, Esq., 21, Gordon Place, Kensington, W.8
Dr. Jorgen H. Berner ...	Norway	Hotel Ambassador, Woburn Place, W.C.1
Dr. Bir Bhan Bhatia (and Mrs. Bir Bhan Bhatia)	India	87, Cowley Road, Mortlake, S.W.14
Brig.-Gen. H. S. Birkett (and Mrs. and Miss Birkett)	Canada	Herbert Tilley, Esq., F.R.C.S., 72, Harley Street, W.1
Dr. H. Bodkin	SouthAfrica	C/o Mrs. Beryman, Boveagh, Collington Lane, Bexhill
Mr. H. E. Brawn, F.R.C.S. (and Mrs. Brawn)	SouthAfrica	Axmens Ford, Ramsdell, Basingstoke
Dr. A. Breinl	Australia	C/o The Agent-General for Queensland, Strand, W.C.
Dr. R. Briercliffe, O.B.E.	Ceylon	Burwains, Rhyl, North Wales
Dr. W. H. Brodie (and Mrs. Brodie)	Hong-Kong and China	C/o Chartered Bank of India, Australia, and China, 38, Bishopsgate, E.C.
Rev. David M. Brown, M.D.	Rhodesia	21, Morningside Park, Edinburgh
Mr. R. Graham Brown, F.R.A.C.S	Australia	5, Adam Street, Portman Square, W.1
Dr. G. Buchanan ...	SouthAfrica	C/o Mrs. Lee, Blagdon Barton, Paignton, South Devon
Professor Wm. Burridge, M.D.	India	—
Professor William Boyd, M.D., F.R.C.P. (and Mrs. Boyd)	Canada	Savoy Hotel, London
Privatdozent Dr. A. Butenandt	Germany	—
Dr. A. D. Campbell	Canada	—
Lt.-Col. J. H. Campbell, D.S.O., R.A.M.C.	Egypt	C/o Glyn Mills and Co., Kirkland House, Whitehall, S.W.
Dr. Russell L. Cecil (and Mrs. Cecil)	U.S.A.	New Clarges Hotel, Half Moon Street
Dr. Emile Colling ...	Luxembourg	—
Dr. John B. Colquhoun	Australia	Corfrach Banaire, Invernessshire
Col. Sir Frank Connor, I.M.S.	Bombay	St. James's Palace Chambers, Ryder Street, S.W.1
Dr. Rolf Creasy, jun. (and Mrs. Creasy)	India	Waverley, Lee-on-Solent, Hants.
Major J. A. Cruickshank, M.C., I.M.S. (ret.) (and Mrs. Cruickshank)	India	Lismoyne, Fleet, Hants.
Dr. F. Daubenton (and Mrs. Daubenton)	SouthAfrica	Royal Palace Hotel, Kensington, S.W.
Dr. W. T. F. Davies ...	SouthAfrica	Nutcombe, Limpsfield, Surrey
Dr. S. L. Dawkins (and Mrs. Dawkins)	SouthAfrica	C/o Australia House, Strand, W.C.
Professor P. P. Debono, M.D., F.R.C.S.	Malta	10, Bedford Place, London, W.C.1
M. le Dr. F. Decourt (and Madame Decourt)	France	Ambassadors Hotel, Upper Woburn Place, W.C.1
Professor Armand Delille	France	Clifton Hotel, Welbeck Street, W.1
M. le Dr. Pierre Dibos (and Madame Dibos)	France	Ambassadors Hotel, Upper Woburn Place, W.C.1
Lt.-Col. A. M. Dick, O.B.E., I.M.S.	India	C/o Messrs. Grindlay and Co., 54, Parliament Street, S.W.1
Dr. J. R. Dickson, O.B.E. (and Mrs. Dickson)	British West Indies	70, Lancaster Gate, W.

Centenary Meeting: Oversea and Foreign Guests (continued)—

Name	Home Address	English Address
Prof. K. H. Digby, F.R.C.S. (and Mrs. Digby)	Hong-Kong and China	10, Grove Court, Drayton Gardens, S.W.10
Dr. A. E. Doisy	U.S.A.	—
Dr. S. Donaldson (and Mrs. Donaldson)	South Africa	C/o Standard Bank of S.A., 10, Clement's Lane, E.C.
Dr. T. Sholto Douglas (and Mrs. Douglas)	Australia	The Stanhope Hotel, South Kensington, S.W.7
Dr. E. G. Dru Drury ...	South Africa	138, King Henry's Road, South Hampstead, N.W.3
Dr. Theodora C. Easterfield	New Zealand	23, Belgrave Road, S.W.1
Professor J. Ellul	Malta	—
Dr. A. S. Erulkar (and Mrs. and Miss Erulkar)	India	30, Warwick Gardens, W.14
Dr. E. W. Fairfax (and Mrs. Fairfax)	Australia	C/o Fleet House, 58, Fleet Street, E.C.4
Professor Dr. Hans Finsterer (and Frau Finsterer)	Austria	Langham Hotel, W.1
Dr. A. McK. Fleming, *M.C.*	Uganda	King Edward VII Sanatorium, Midhurst, Sussex
Dr. Wm. Fletcher-Barrett (and Mrs. Fletcher-Barrett)	Egypt	C/o Royal Societies' Club, 63, St. James's Street, S.W.
Dr. R. Francis (and Mrs. Francis)	Australia	Gleneagles Hotel, Perthshire
Dr. W. Frei...	Switzerland	—
Professor Leroy U. Gardner (and Mrs. Gardner)	U.S.A.	C/o Professor Kettle, 44, Lansdowne Road, W.11
Dr. G. H. Gill (and Mrs. Gill)	Gibraltar	Berners Hotel, Berners Street, W.1
Sir John Goodwin, K.C.B., C.M.G., D.S.O.	Australia	C/o Army and Navy Club, Pall Mall, S.W.1
Professor Dr. E. Gorter	Holland	—
Dr. F. W. Greaves (and Mrs. Greaves)	Canada	C/o Royal Bank of Canada, West End Branch, Cockspur Street
Dr. Max Greenberg ...	South Africa	Park Lane Hotel
Dr. H. O. Gunewardene	Ceylon	—
Professor J. W. C. Gunn	South Africa	C/o Professor J. A. Gunn, M.D., Pharmacology Dept., South Parks Road, Oxford
Major T. J. Hallinan, C.B.E. (and Mrs. Hallinan)	Mesopotamia	15, Canadian Avenue, Catford, S.E.6
Lt.-Col. W. L. Harnett, F.R.C.S., I.M.S. (and Mrs. Harnett)	India	C/o Westminster Bank, 10, St. Martin's Place, W.2
Dr. J. W. Harris (and Mrs. Harris)	South Africa	Ardmay Hotel, Woburn Place, W.C.1
Professor R. St. A. Heathcote, M.D. (and Mrs. Heathcote)	Egypt	22, Polstead Road, Oxford
Dr. H. L. Heimann (and Mrs. Heimann)	South Africa	C/o W. E. Page, Esq., 9, Chelwood Gardens, Richmond, Surrey
Dr. J. A. Henderson ...	British West Indies	C/o H. L. Brutton, Esq., 36, Bedford Row, W.C.1
Professor V. E. Henderson, M.B. (and Mrs. Henderson)	Canada	—
Dr. H. H. Hepburn, F.R.C.S.Ed.	Canada	C/o Bank of Montreal, 9, Waterloo Place
Dr. M. M. Hockin (and Mrs. Hockin)	New Zealand	C/o Bank of Australasia, 4, Threadneedle Street, E.C.
Dr. J. G. A. Honig	Holland	—
Dr. E. Horgan	U.S.A.	Garrick Hotel, 5, Charing Cross Rd.
Dr. S. C. Howard (and Mrs. Howard)	Hong-Kong and China	Regent Palace Hotel, Piccadilly
Dr. H. E. Ali Ibrahim Pasha, C.B.E.	Egypt	Hotel Metropole, Northumberland Avenue
Dr. S. Raju Iyengar ...	India	103, Charlotte St., Fitzroy Sq., W.1
Dr. B. M. Johns (and Mrs. Johns)	Federated Malay States	C/o Chartered Bank of India, 38, Bishopsgate, E.C.
Dr. Ceri M. Jones (and Mrs. Jones)	India	Royal Stuart Hotel, 163, Cromwell Road, S.W.
Wing Com. P. M. Keane	Mesopotamia	23 Group, R.A.F., Grantham
Dr. P. James Kelly ...	British West Indies	66, Shooters Hill Road, Blackheath, S.E.3
Dr. Lacassagne	France	—
Professor Bruno Lange	Germany	C/o Dr. Bernard Schlesinger, 53, Hollycroft Avenue, N.W.3
Dr. E. M. Litchfield (and Mrs. Litchfield) ...	New Zealand	23, Belgrave Road, W.1
Mr. G. V. Lockett, F.R.C.S. (and Mrs. Lockett)	Jamaica	Court Royal Hotel, 105, Lancaster Gate, W.2
Dr. Svend Lomholt ...	Denmark	Regent Palace Hotel, Piccadilly
Dr. J. C. MacGown (and Mrs. MacGown)	Hong-Kong and China	Fairholme, Ettrickbridge, N.B.
Col. H. M. MacKenzie	India	C/o Lloyds Bank, G.2, Pall Mall, S.W.1
Dr. Naguib Mahfouz Bey	Egypt	Metropole Hotel
Dr. H. Maillart	Switzerland	—
Dr. J. Malcolm (and Mrs. Malcolm)	New Zealand	1, Mardale Crescent, Edinburgh
Dr. Leopold Meyer ...	Belgium	—
Dr. T. W. Meagher ...	Australia	C/o Australia House, Strand, W.C.2
Dr. G. W. Mearns (and Mrs. Mearns)	British West Indies	4, Princes Avenue, Muswell Hill, N.W.10
Dr. B. G. Mello (and Mrs. Mello)	South Africa	Overseas League, 3, Park Place, St. James's, S.W.1
Dr. W. B. Mercer ...	New Zealand	C/o High Commissioner for New Zealand, 415, Strand, W.C.
Dr. J. M. Le Mée	France	Savoy Hotel
Professor W. R. Miles ...	America	4, Kingsmead Close, Selly Oak, Birmingham
M. le Dr. Gaston Milian	France	—
Professor F. R. Miller, M.D., F.R.S.C.	Canada	—
Dr. L. E. Miller (and Mrs. Miller)	South Africa	C/o Sinclair Hamilton and Co., 17, St. Helens Place, E.C.3
Dr. Otto Moltke	Denmark	C/o Professor Fleming, 20, Danvers Street, S.W.3
Dr. A. S. Monro (and Mrs. Monro)	Canada	Savoy Hotel, Strand
Dr. W. B. A. Moore (and Mrs. Moore)	Hong-Kong and China	C/o Hong Kong & Shanghai Bank, 9, Gracechurch Street, E.C.3
Dr. H. M. Moran	Australia	Langham Hotel, W.1
Professor Dr. Ernst Moro (and Frau Moro)	Germany	—
Dr. J. Newman Morris (and Mrs. Morris)	Australia	C/o National Bank of Australia, Strand Branch, W.C.
Major D. McVicker, *M.C.*, R.A.M.C.	Gibraltar	—
Lt.-Col. R. V. Morrison, F.R.C.P., Ed.	Burma	C/o Lloyds Bank Ltd., 6, Pall Mall, S.W.1
Dr. K. Narbeshuber ...	Austria	C/o Dr. J. J. Paterson, Public Health Dept., Guildhall, Maidenhead
Lt.-Col. J. J. Harper-Nelson, O.B.E., *M.C.*, I.M.S. (and Mrs. and Miss Harper-Nelson)	India	C/o Messrs. Grindlay and Co., 54, Parliament Street, S.W.1
Sir Henry S. Newland, C.B.E., D.S.O., M.S. F.R.C.S. (and Lady Newland)	Australia	Stanhope Court Hotel, Stanhope Court, S.W.
Dr. Hilda M. Northcroft	New Zealand	23, Upper Wimpole Street, W.1
Captain E. A. O'Connor, I.M.S.	India	C/o Dr. J. F. O'Connor, County Hospital, Croom, Co. Limerick, Ireland
Dr. G. E. Oddin-Taylor (and Mrs. Oddin-Taylor)	South Africa	5, Pelham Crescent, S.W.7
Dr. A. J. Orenstein ...	S. Africa	49, Weymouth Street, W.1
Lt.-Col. T. F. Owens, I.M.S.	Burma	—
Dr. H. B. Owen	Uganda	C/o J. Sandberg, Esq., 24, Melrose Avenue, Cricklewood, N.W.2
Professor E. Paschen ...	Germany	C/o Professor Ledingham, Lister Institute, Chelsea, S.W.
Dr. D. D. Paton	Australia	14, Alexander Mansions, 77, Stanlake Road, W.12
Dr. G. E. Peacock ...	South Africa	Cleve Hall, Denmark Hill, S.E.5
Mr. G. H. Peall, F.R.C.S.Ed.	Rhodesia	—
Mr. J. W. G. Phillips, F.R.C.S.	Rhodesia	The Laurels, Hinton Waldrist, Faringdon, Berks
Dr. A. Primrose (and Mrs. Primrose)	Canada	Queen Anne's Mansions, St. James's
Dr. J. E. R. Ramdeholl	Ceylon	18, Gordon Street, W.C.1
Dr. Henry O. Reik (and Mrs. Reik)	U.S.A.	—
Dr. Arnold Rice Rich ...	U.S.A.	—
Dr. H. Gordon Roberts (& Mrs. Gordon Roberts)	India	9, Marine Park, West Kirby, Cheshire
Dr. W. Gordon Robson (and Mrs. Gordon Robson)	South Africa	C/o Standard Bank of South Africa, Northumberland Avenue, W.C.1
Dr. R. H. Rockett ...	Australia	Queen Mary's Hosp., Sidcup, Kent
Dr. A. Rollier	Switzerland	—
Professor A. H. J. M. Van Rooy	Holland	C/o Comyns Berkeley, Esq., F.R.C.S., 53, Wimpole St., W.1
Mr. I. R. Rosin, F.R.C.S.Ed.	Rhodesia	38, Worongon Road, St. John's Wood, N.W.8
Dr. T. C. Routley (and Mrs. Routley)	Canada	Savoy Hotel
Dr. R. Row (and Miss Row)	India	C/o Messrs. Tata Ltd., Capel House, New Broad Street, E.C.
Dr. Schoenheimer ...	Germany	C/o A. J. Gardner, Esq., M.A., 12B, Hyde Park Mansions, N.W.1
Professor Schuffner ...	Holland	Belgravia Hotel, W.
Dr. E. A. Seale	South Africa	C/o Standard Bank of South Africa, Northumberland Avenue
Dr. S. S. Selladurai ...	Ceylon	18, Gordon Street, W.C.1
Dr. George H. Simmons (& niece, Miss Nicholls)	U.S.A.	The Willows, Bromsgrove
Dr. W. H. Simpson ...	New Zealand	C/o High Commissioner for New Zealand, 415, Strand
Dr. E. S. Sowerby (and Mrs. Sowerby)	South Africa	C/o Dr. F. G. Spear, Myrtle Cottage, Hills Road, Cambridge
Dr. Gordon Spencer (and Mrs. Gordon Spencer)	Mesopotamia	Newlands, Putley, near Ledbury, Hereford
Dr. F. N. G. Starr (and Mrs. Starr)	Canada	Queen Anne's Mansions, St. James's, S.W.
Dr. S. Seguin Strahan ...	Hong-Kong and China	10, Woodville Road, Ealing, W.5
Dr. René Sand	Belgium	Grosvenor Hotel, Victoria Station
Dr. L. S. Talbot (and Mrs. Talbot)	New Zealand	C/o James Bryce, Bookseller, 54, Lothian Street, Edinburgh
Major Treston F.R.C.S., M.C.O.G., I.M.S.	India	C/o The Junior United Service Club, S.W.1
Dr. A. B. Tucker (and Mrs. Tucker)	South Africa	Oakfield House, Barrow Road, Streatham Common
Dr. W. H. Unwin	New Zealand	6, Ravensbourne Road, Bromley, Kent
Mr. P. N. Vellacott, O.B.E., F.R.C.S.	South Africa	C/o Standard Bank of South Africa, Clements Lane, E.C.
Dr. J. Stanley Verco (and Mrs. Verco)	Australia	C/o National Bank of Australia, Strand, W.C.2
Dr. J. P. de Villiers (and sister)	South Africa	C/o High Commissioner for South Africa, Africa House, Strand
Professor F. Voltz ...	Germany	C/o C. Lane Roberts, Esq., F.R.C.S., 17, Sussex Place, N.W.1
Capt. K. N. Waghray, M.B.	India	70, Park Road, Higher Crumpsall, Manchester
Dr. George Gray Ward (and Mrs. Gray Ward)	U.S.A.	Berkeley Hotel, W
Professor Weill-Halle	France	—
Dr. Wm. Charles White (and Mrs. White)	U.S.A.	—
Major S. A. Wilkinson (and Mrs. Wilkinson)	India	C/o Mrs. Wilkinson, 1, Mount Park Crescent, Ealing, W.5
Dr. W. E. Wilson (and Mrs. Wilson)	British West Indies	Endsleigh Hotel, Endsleigh Gardens, W.C.
Dr. Ian J. Wood	Australia	C/o Bank of Australia, 17, Northumberland Avenue
Lt.-Col. R. E. Wright, C.I.E., I.M.S. (and Mrs. Wright)	India	C/o Thos. Cook and Son, Berkeley Street, W.1

Centenary Meeting Notices

The hosts for the Centenary Meeting of the British Medical Association are the Metropolitan Counties Branch.

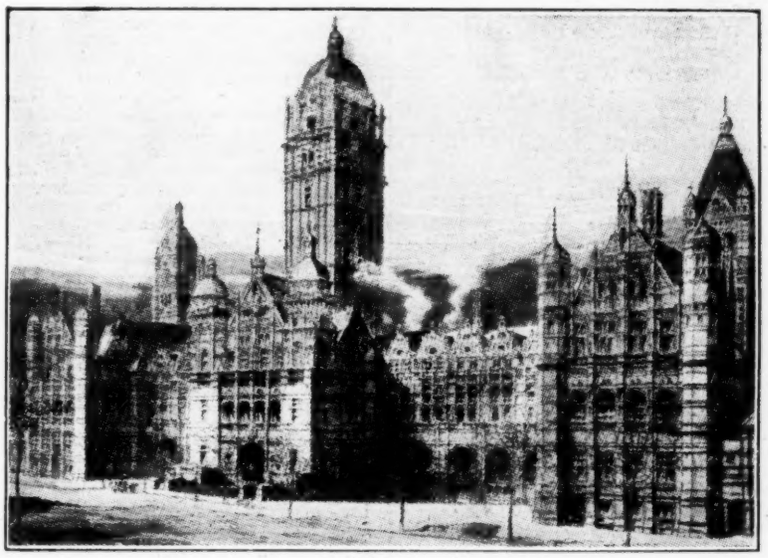
The Annual Representative Meeting opened at the B.M.A. House, Tavistock Square, on the morning of Thursday, July 21st, and will be continued on the three following weekdays.

There will be a pilgrimage to Worcester on Sunday, July 24th, for the purpose of unveiling two memorials to Sir Charles Hastings, who founded the Association at Worcester in 1832.

The incoming President, Lord Dawson of Penn, will deliver his address at the adjourned annual general meeting in the Queen's Hall, Langham Place, W., on Tuesday, July 26th, at 4 p.m. Its title is "One Hundred Years and After."

The Popular Lecture will be given at University College, London, on Friday, July 29th, at 8 p.m., by Professor Julian Huxley on "The Biology of Human Nature."

The Annual Exhibition of Surgical Appliances, Drugs, Foods, Books, etc., will be open at the University of London, Imperial Institute Road, S.W., from Tuesday, July 26th, to Friday, July 29th, from 9 a.m. to 6 p.m.



IMPERIAL INSTITUTE AND UNIVERSITY OF LONDON.

THE SCIENTIFIC SECTIONS

The clinical and scientific work of the Centenary Meeting will be divided among twenty-four Sections, meeting on Wednesday, Thursday, and Friday, July 27th, 28th, and 29th, at the Imperial College of Science and Technology, South Kensington. (The Section of Medicine will meet in the Royal Geographical Society's Hall, Kensington Gore, S.W. ; the Section of Surgery in the Imperial Institute, East Gallery ; the Section of Bacteriology in the lecture theatre of the Science Museum, South Kensington ; and the Section of Medical Sociology in the Great Hall, B.M.A. House, Tavistock Square, W.C.) The programme for the Sections, with lists of their officers, appeared in full in the *Supplement* to our last issue, and will be reprinted in the *Handbook* of the Meeting.

REGISTRATION AND TICKETS

All members must register at the Reception Room in the Imperial Institute, South Kensington, S.W.7 (near the Royal Albert Hall), which will be open on Monday, July 25th, from 2 p.m. to 6 p.m., and on the following Tuesday, Wednesday, Thursday, and Friday from 9 a.m. to 6 p.m.

After signing the book members will each be given a "Member's Card," which will entitle them to apply for *two* tickets for any entertainment or function, but no member will obtain more than two tickets until all other members are supplied. Tickets will be issued in *priority of application on production of membership card.*

All tickets will be issued at the ticket counter at the north end of the Great Hall, Imperial Institute.

CENTENARY DINNER

The Centenary Dinner of the British Medical Association will be held in the Royal Albert Hall, London, S.W., on Thursday, July 28th, at 7.30 for 8 p.m., under the presidency of Lord Dawson of Penn. H.R.H. the Prince of Wales will be the principal guest. Each member is entitled to bring, on payment, one guest (lady or gentleman). Medical men who are non-members of the Association cannot buy tickets. The majority of the dinner guests will sit at forty-two tables arranged on the "big floor" of the hall, but about 300 will be accommodated in the loggia and ground floor boxes. A perfect system of amplification is being installed so that speeches shall be heard clearly by everyone. Tickets will be allotted in strict order of application accompanied by cheque. A plan of the hall showing the seating arrangements for the dinner appeared in the *Supplement* of June 11th. Price of tickets, 30s. each. All applications to be addressed to the Honorary Organizing Secretary, Centenary Meeting, Tavistock House North, Tavistock Square, W.C.1.

ACADEMIC DRESS

Academic dress will be worn at the official Centenary Service in the Cathedral and the High Mass at the Catholic Church, on Sunday, July 24th, on the occasion of the Pilgrimage to Worcester ; at the President's Address and President's Reception and Dance on Tuesday, July 26th ; at the Civic Reception at the Guildhall on Wednesday, July 27th. Those desiring robes should communicate with Messrs. Ede and Ravenscroft, 93–94, Chancery Lane, London, W.C.2, the official robemakers to the Association, or with the robemakers of their own universities.

OVERSEA GUESTS AND DELEGATES

Will all foreign Oversea Guests, Representatives, and Delegates please communicate with the Oversea Department, Centenary Office, Tavistock House North, Tavistock Square, W.C.1, giving date of arrival, by whom they are accompanied, and where and how long they are staying.

INFORMATION BUREAU

For the convenience of members attending the Centenary Meeting who will be in London during the week-end preceding the meeting an Information Bureau will be open at B.M.A. House, Tavistock Square, W.C., from 9 a.m. to 6 p.m. on Friday and Saturday, July 22nd and 23rd.

WORCESTER PILGRIMAGE

The Union Club, The Cross, Worcester, has kindly offered to make all male members of the British Medical Association attending the Pilgrimage on Sunday next, July 24th, honorary members of the club for that day. Brief particulars of the arrangements for the day are given at page 163 of this issue.

Centenary Meeting

EXCURSIONS AND ENTERTAINMENTS

The complete programme and time-table will be printed in the "Handbook" of the meeting. The following brief particulars of excursions and entertainments are supplementary to those given in the Synopsis of the Time-Table published in last week's "Supplement" (p. 33).

Sunday, July 24th

Pilgrimage to Worcester.
For those remaining in London visits to:
1.45 p.m.—Oldlands Hall, Uckfield, Sussex, by invitation of Sir Bernard Eckstein, Bt.
2.30 p.m.—Brooklands Motor Course, Weybridge.

Monday, July 25th

a.m.—Tyrwhitt-Drake Zoo, Crystal Palace.
2.0 p.m.—The United Dairies, Willesden.
2.30 p.m.—Reception by Medical Society of London.
2.30 p.m.—Glaxo Factory.
3.0 p.m.—Visit to Newspaper Offices.
3.0 p.m.—Lloyds.
3.0 p.m.—Messrs. Bryant and May's Fire-making Museum.
4.0 p.m.—Reception by Lady Dawson.
6.0 p.m.—B.B.C. House.
8.30 p.m.—Reception at Wellcome Museum.
9.0 p.m.—Newspaper Offices.
9.15 p.m.—Reception at Forum Club.

Tuesday, July 26th

9.30 a.m.—Down House and Chislehurst Caves.
9.30 a.m.—Whipsnade Zoo.
9.45 a.m.—Waltham Abbey, Epping Forest.
9.45 a.m.—King Edward VII Sanatorium, Midhurst, and King George V Sanatorium, Godalming.
10.0 a.m.—"Tourlets" of London.
10.0 a.m.—St. Albans.
10.30 a.m.—Messrs. Lyons and Co., Ltd., Cadby Hall.
10.30 a.m.—Glaxo Factory.
11.0 a.m. and 12 noon.—*Punch* Office.
a.m.—Tyrwhitt-Drake Zoo, Crystal Palace.
1.30 p.m.—B.B.C. House.
1.45 p.m.—Messrs. Horlick's Malted Milk Factory, Slough.
2.0 p.m.—Oxo Factory.
2.0 p.m.—Kew Gardens.
2.0 p.m.—L.G.O.C. Training Centre.
2.0 p.m.—United Dairies, Willesden.
2.0 p.m.—*Punch* Office.
2.30 p.m.—Messrs. Lyons and Co., Ltd., Cadby Hall.
2.30 p.m.—Express Dairies, Finchley.
2.30 p.m.—Medical Society of London.
2.45 p.m.—Drive through Surrey to Ripley.
3.0 p.m.—Visit Newspaper Offices.
3.0 p.m.—*Punch* Office.
3.0 p.m.—Dr. Johnson's House, Gough Square, by invitation of Mr. Cecil Harmsworth.
3.0 p.m.—Lloyds.
5.30 p.m. to 7.0 p.m.—Cocktail party at Claridge's, by invitation of directors.
9.0 p.m.—Newspaper Offices.

Wednesday, July 27th

9.25 a.m.—Windsor—Bourne End.
9.30 a.m.—Canterbury—Rochester.
9.30 a.m.—Whipsnade Zoo.
9.40 a.m.—Oxford—Blenheim Palace, by invitation of the Duke and Duchess of Marlborough.
9.40 a.m.—Oxford—Marlow.
10.0 a.m.—"Tourlets" of London.
10.30 a.m.—Messrs. Lyons and Co., Ltd., Cadby Hall.
10.30 a.m.—Glaxo Factory.
11.18 a.m.—Warwick—Stratford-on-Avon.
a.m.—Tyrwhitt-Drake Zoo, Crystal Palace.
1.15 p.m.—Petworth House (picture gallery), by permission of Lord Leconfield.
1.30 p.m.—Royal Observatory, Royal Naval Museum, and Dreadnought Hospital, Greenwich.
1.45 p.m.—Messrs. Horlick's Malted Milk Factory, Slough.
1.45 p.m.—Imperial Airways, Croydon.
2.0 p.m.—Down House—Chislehurst Caves.
2.0 p.m.—Burnham Beeches—Stoke Poges.
2.0 p.m.—Oxo Factory.
2.0 p.m.—United Dairies, Willesden.
2.0 p.m.—Hampton Court.
2.15 p.m.—River Trip, Pool of London and Docks.
2.30 p.m.—Messrs. Lyons and Co., Ltd., Cadby Hall.
2.30 p.m.—Medical Society of London.
3.0 p.m.—Dr. Johnson's House, Gough Square.
3.0 p.m.—Lloyds.
3.0 p.m.—Newspaper Offices.
3.0 p.m.—Salters' Hall, Fishmongers' Hall.
6.0 p.m.—B.B.C. House.
8.30 p.m.—Reception Wellcome Museum.
9.0 p.m.—Reception, Mrs. Aughal Easter, 7, Sussex Place.
9.0 p.m.—Newspaper Offices.
9.30 p.m.—Dance, B.M.A. House, Tavistock Square.

Thursday, July 28th

9.0 a.m.—Cow and Gate Factory, Templecombe, Somerset.
9.30 a.m.—Whipsnade Zoo.
9.45 a.m.—Waltham Abbey—Epping Forest.
10.30 a.m.—"Tourlets" of London.
10.30 a.m.—Messrs. Lyons and Co., Ltd., Cadby Hall.
10.30 a.m.—Glaxo Factory.
a.m.—Tyrwhitt-Drake Zoo, Crystal Palace.
11.0 a.m.—Pictures at Bridgewater House, by permission of the Earl of Ellesmere.
11.45 a.m.—Messrs. Oppenheimers' Factory and Laboratories; buffet lunch.
12.10 p.m.—Treloar Cripples' Home, Alton.
1.30 p.m.—B.B.C. House.
1.45 p.m.—Messrs. Horlick's Malted Milk Factory, Slough.
1.45 p.m.—Imperial Airways, Croydon.
2.0 p.m.—Knebworth House, by permission of the Earl of Lytton.
2.0 p.m.—Kensington Palace, Leighton House, and Holland House.
2.0 p.m.—Oxo Factory.
2.0 p.m.—L.G.O.C. Training Centre, Chiswick.
2.0 p.m.—General Electric Company's Laboratories, Wembley.
2.0 p.m.—Imber Court, Headquarters of the Mounted Police, by permission of the Commissioner of Metropolitan Police.
2.0 p.m.—Hampton Court.
2.15 p.m.—Hatfield House, by invitation of the Marquess and Marchioness of Salisbury.
2.15 p.m.—Gas Light and Coke Co., Ltd.'s, Laboratories.
2.30 p.m.—Express Dairies, Finchley.
2.30 p.m.—Messrs. Lyons and Co., Ltd., Cadby Hall.
2.30 p.m.—Reception by Medical Society of London.
2.45 p.m.—Drive through Surrey to Ripley.
3.0 p.m.—Royal Institution, Davy-Faraday Museum, Albemarle Street.
3.0 p.m.—Newspaper Offices.
3.0 p.m.—Merchant Taylors' Hall, Grocers' Hall.
3.0 p.m.—Cordwainers' Hall, Clothworkers' Hall.
3.0 p.m.—Dr. Johnson's House, Gough Square.
3.0 p.m.—Lloyds.
3.0 p.m.—Messrs. Bryant and May's Fire-making Museum.
3.30 p.m. to 6.0 p.m.—At Home, Lady English, 82, Brook Street.
9.0 p.m.—Newspaper Offices.
9.30 p.m.—Dance at B.M.A. House, Tavistock Square.

Friday, July 29th

9.30 a.m.—Whipsnade Zoo.
10.0 a.m.—"Tourlets" of London.
10.0 a.m.—St. Albans.
a.m.—Tyrwhitt-Drake Zoo, Crystal Palace.
1.30 p.m.—Royal Observatory, Royal Naval Museum, and Dreadnought Hospital, Greenwich.
1.30 p.m.—Garden Party (3—5.30) at Ewhurst, Surrey, by invitation of Mr. and Mrs. Rowlands.
2.0 p.m.—Down House—Chislehurst Caves.
2.0 p.m.—Kensington Palace, Leighton House, and Holland House.
2.0 p.m.—Kew Gardens.
2.0 p.m.—Penshurst Place, by invitation of Lord and Lady de L'Isle and Dudley.
2.0 p.m.—General Electric Company's Laboratories, Wembley.
2.0 p.m.—Imber Court, Headquarters of the Mounted Police.
2.0 p.m.—United Dairies, Willesden.
2.0 p.m.—Mount Vernon Hospital, Northwood.
2.15 p.m.—Gas Light and Coke Co., Ltd.'s, Laboratories.
2.30 p.m.—Express Dairies, Finchley.
2.30 p.m.—Medical Society of London.
3.0 p.m.—St. John's Gate, Clerkenwell.
3.0 p.m.—Newspaper Offices.
3.0 p.m.—Goldsmiths' Hall, Barbers' Hall.
3.0 p.m.—Dr. Johnson's House, Gough Square.
3.0 p.m.—Lloyds.
3.0 p.m.—Messrs. Bryant and May's Fire-making Museum.
9.0 p.m.—Newspaper Offices.
9.0 p.m.—M.C.B. Reception and Dance, Grosvenor House.

N.B.—Particulars of excursions and their prices will be found in the *Handbook* of the Meeting, which every member will receive on registering at the Reception Room.

We are asked to correct an error in the list of Clubs which have kindly offered hospitality to guests during the Centenary Meeting. "International Sports Club, Grosvenor House," should read "International Sportsmen's Club, Upper Grosvenor Street, W.1." The mistake has unfortunately been repeated in the *Handbook*. This club is open to both men and women.

Scotland

Canadian Doctors in Scotland

On July 13th a dinner was held in the hall of the Royal College of Physicians, under the chairmanship of Dr. John D. Comrie, president of the Edinburgh Branch of the British Medical Association, at which some 140 members of the Canadian Medical Association and of the British Medical Association were present. The toast of "The Guests" was proposed by the chairman and responded to by Dr. A. Primrose, president of the Canadian Medical Association. Sir Robert Philip, in an impressive speech, proposed "Our Common Heritage," and the Chairman of Council of the Canadian Medical Association, Dr. A. T. Bazin, responded. Dr. George Gibson and Dr. F. N. G. Starr, president of the Royal College of Physicians and Surgeons of Canada, also spoke.

University of Aberdeen: Regius Chair of Surgery

The University Court has decided that in future the professor of surgery shall devote the greater part of his time to the duties of the chair, and that his private practice will be limited to cases seen and treated in Aberdeen—with rare exceptions. It is understood that preference will be given to those candidates of wide experience of clinical surgery and acknowledged power of teaching who, by their special training and record, have given evidence of their capacity for, and interest in, research. The holder of the chair is an honorary surgeon to the Aberdeen Royal Infirmary, with charge of beds, and an honorary consultant in the municipal hospitals. The appointment to the chair is made by the Crown on the recommendation of His Majesty's Secretary of State for Scotland.

Provision of Medical Services in Glasgow

Dr. A. K. Chalmers, who was for many years medical officer of health for Glasgow, recently lectured to the City of Glasgow Society of Social Service on "Our provision for treating the sick," and the lecture is published in the *Glasgow Medical Journal* for July. It opens with a reference to the report, made in 1920, to the Scottish Board (now the Department) of Health, by the Consultative Council, under the chairmanship of Sir Donald MacAlister, on the systematized provision of medical and allied services which should be available for the community. That report adopted the family as the unit of the scheme and the family doctor as the first link in the chain of medical provision. With this picture of a complete service in the background, Dr. Chalmers proceeds to consider how far the existing provisions meet the requirements. He summarizes the hospital history of Glasgow by way of illustrating how the extraordinary complexity of hospital provision arose. He next turns to the influence of maternity and child welfare schemes in bringing down the infant death rate, which in Glasgow as elsewhere has declined markedly during the present century. He then passes in review the school medical service, and, following this, the national health insurance service, which includes 40 per cent. of the Glasgow population within its scope, a proportion which would be about doubled if the service were extended to dependants. Dr. Chalmers believes it to be an open question whether the educational influence of the services mentioned has not outweighed in importance the immediate effect of their operation on the persons directly affected by them; but the combined effect has been to create an entirely new conception of the value of organized effort in the treatment and prevention of disease. Finally, after dealing with the Local Government Act, 1929, which opens the way for an adequate institutional service for diseases of all kinds, he concludes with the comment that more and more the causes of disease are being disclosed, not at the bedside, but in the laboratories of the research worker, and that there is some risk that the resources of medicine may increase more rapidly than the opportunities of applying them to the sick person.

St. Andrews Ambulance Association

Lord Provost Sir Thomas Kelly outlined the progress of the St. Andrews Ambulance Association when he presided over the annual meeting held at the headquarters of the association in Glasgow. The association, he said, was now in its fiftieth year, but before 1882 the only official means of conveyance of injured persons to hospital in the city of Glasgow was a sort of barrow propelled by hand; occasionally a horse-drawn cab with iron-tyred wheels was brought into use. The discomfort to a person with broken limbs bundled into such conveyances by people ignorant of the elementary principles of first-aid could be conceived. The establishment of the association brought a slight change for the better; it was recorded in the first annual report that centres for the teaching of first-aid to the injured had been formed in Glasgow, Edinburgh, and Coatbridge. Glasgow thereafter possessed two horse-drawn wagons, Coatbridge one, and Edinburgh was content with a wheeled litter. To-day the association had fifty-two centres in Scotland and had seventy-two motor wagons at its disposal. In the first year of their existence the Glasgow wagons carried 372 persons as compared with 17,147 in 1931. During the past year throughout Scotland the association had dealt with 36,000 cases. Reference was made to the importance of the nursing section of the association, which gave instruction to 540 pupils in the first year as compared with 10,000 at the end of 1931. The St. Andrews Ambulance Corps, as a voluntary service, was invaluable; its strength to-day was over 7,000. It was also announced that the finances of the Glasgow headquarters were satisfactory, although money was required for future developments.

Royal Medico-Psychological Association

At the annual meeting of the Royal Medico-Psychological Association, held at Stirling on July 12th, 13th, and 14th, at which over 100 delegates were present, Dr. R. B. Campbell, medical superintendent of Larbert Mental Hospital, in his presidential address dealt with the development of the care of the insane in Scotland. He spoke of the time when general hospitals would have out-patient departments for mental ailments just as they have for other forms of illness. The problem of dealing with mental deficiency in Scotland was far from satisfactorily solved, largely in consequence of the delay occasioned by the war. The principle of admitting voluntary patients into asylums had, however, been early recognized in Scotland, and the practice had been in operation since 1866. The establishment of child guidance clinics, after-care associations, and other organizations for social service, combined with better understanding of all that was embodied in mental hygiene, would undoubtedly in years to come have far-reaching beneficial effects on the community. Sir John Macpherson, late Senior Commissioner in Lunacy for Scotland, in proposing a vote of thanks, said that the majority of medical superintendents in Scotland had long advocated the boarding-out system, which gave to mental patients the advantage of mingling in the social life of the community. At the meeting on July 14th, at Stirling District Mental Hospital, Larbert, Sir John spoke of the changes which had taken place in the forty-three years since he had gone to that institution as medical superintendent. In the evening, at the dinner of the association, the Lord Advocate, proposing the toast of "The

Royal Medico-Psychological Association," said that lawyers relied a very great deal upon doctors in the study of crime in relation to mental peculiarity, and he thought he could say that they followed medical opinion in those matters. Whatever the law might be theoretically, anyone who was familiar with the practical legal work of the country knew that they had moved far from the law as laid down by the fourteen judges in the M'Naghten case eighty-nine years ago—two years after the formation of the association. The community was no longer divided into the sane and the insane. It was recognized that there were greys as well as whites and blacks, and this was largely due to the work of the medical profession.

Dr. T. W. M. Cameron

Dr. T. W. M. Cameron, M.R.C.V.S., who has been appointed to the newly created chair of helminthology at McGill University, Montreal, and to the directorship of the Institute of Parasitology at Macdonald College (the agricultural faculty of the university) was an honorary secretary of the Section of Comparative Medicine at the Edinburgh Meeting of the British Medical Association, and is again officiating in that capacity at the Centenary Meeting. He was lecturer and Milner Research Fellow in the department of helminthology of the London School of Hygiene and Tropical Medicine from 1925 to 1929, and in 1928 he carried out a series of helminthological investigations in the British West Indies under the auspices of the school. He was also secretary of the Tropical Diseases Section and vice-president of the Comparative Medicine Section of the Royal Society of Medicine. On his appointment to the lectureship in helminthology in Edinburgh University in 1929 he became secretary of the newly formed branch of the Royal Society of Tropical Medicine and Hygiene there. His contributions to medical science include numerous papers on human and comparative helminthology, and on comparative medicine, including a book on animal diseases in relation to man. He was for some years on the abstracting staff of the *Tropical Diseases Bulletin* and the *Bulletin of Hygiene*, and he has recently become associated with Professor R. T. Leiper in the production of *Helminthological Abstracts*. He leaves to take up his new appointment in September of this year.

England and Wales

The Red Cross Clinic for Rheumatism

The rapid progress made by the British Red Cross Society's clinic for rheumatism in Peto Place, Regent's Park, is shown by the figures for June, when, according to the monthly report, the number of new patients was higher than it has been since the clinic opened. A record number of attendances—8,265—was registered during the month, as well as the highest number of attendances for a single week. During the past quarter 24,453 patients have attended the clinic ; in the corresponding period last year the number was 21,009. During June a regular clinic for vaccine therapy of rheumatism was started. The Section of Physical Medicine of the British Medical Association is to hold a meeting at the clinic during the Association's centenary celebrations next week, and a programme has been arranged which will enable members to gain an insight into the extent of the work the clinic is doing.

The Royal Sanitary Institute

This year the Royal Sanitary Institute held its forty-third annual congress at Brighton, under the presidency of Lord Leconfield. Members and delegates of the congress were provided with a wide and varied programme, covering the whole range of preventive medicine. How vast this range has become may be gathered from the different papers that were read, including such subjects as the curability of cancer, the prevention of measles mortality, illumination and vision in industry, infant and maternal welfare, town planning, and national health insurance. Guests, members, and delegates met for the congress dinner at the Grand Hotel on July 14th, with Lord Leconfield in the chair. After the loyal toast had been honoured, Dr. Charles Porter, chairman of the council of the Institute, gave the toast of " The Mayor and Corporation of Brighton." Dr. Porter said that the success of the congress had been due in no small measure to the activities of the Mayor and Corporation—particularly in the provision of fine weather. In reply, the Mayor welcomed the visitors to Brighton, whose merits as a health and pleasure resort he breezily extolled. In proposing the health of the delegates, Lord Leconfield referred to the regrettable lapse of the weather at the visit of the congress to Petworth, and to the difficulties of a landowner who wanted to move unwilling tenants into better houses. In a brief speech Dr. Mahmoud Khan Hafezi of Persia replied on behalf of the delegates, expressing his gratitude for the hospitality and intellectual fare provided at Brighton. Further responses were made by Sir Henry N. Barwell, Agent-General for South Australia, and by Councillor D. J. Bailey of Blackpool. Sir Henry Barwell said that a congress such as was then being held at Brighton was an admirable way of pooling knowledge for the benefit of people from all parts of the world. He put in a serious plea for full co-operation between the Motherland and the Dominions in trade, science, and culture. Councillor Bailey said that Brighton had set an example for Blackpool to emulate in the visit of the congress to Blackpool in 1933. The toast of " The Local Committee and Officers of the Congress " was proposed by Dr. George F. Buchan, and ably responded to by Councillor E. Denne, Mr. J. H. Rothwell, and Dr. Duncan Forbes.

Fixation of Medical Staff at L.C.C. Special Hospitals

The Central Public Health Committee has submitted to the London County Council its long-promised recommendations regarding the number of medical staff to be employed at special hospitals. On account of the extreme fluctuations in the number of patients under treatment at infectious diseases hospitals, the late authority, the Metropolitan Asylums Board, laid down no fixed medical staff for the fever service. The committee considers that the proportion of medical officers (exclusive of medical superintendents) to patients at the acute fever hospitals should be, on the average, one to 100, and at convalescent fever hospitals one to 180. Making allowance for necessary departures from this proportion, it is laid down that a minimum staff of four medical officers (again exclusive of medical superintendents) is required for each of the acute fever hospitals, except the South-Western Hospital, where three will be sufficient. At the Southern Convalescent Hospital two will be required, and at the Northern, which contains post-encephalitis and tuberculosis units as well as a fever section, four. Special provision is also made for the River hospitals, which deal with small-pox cases. The total minimum assistant medical staff calculated in accordance with these principles is thirty-eight, providing, on the basis above suggested, for a total of about 4,000 fever patients. The annual minimum number of patients under treatment falls below this figure, and the minimum number under treatment at individual hospitals is, in almost every instance, less than 400. The maximum number is generally about 6,000, which means that some fifteen to twenty temporary medical officers would be required in epidemic seasons. The committee considers that this is too high a proportion of temporary staff, and that the total number of permanent

staff should be not less than fifty, seven of whom would form a floating staff of assistant medical officers to be distributed among the various hospitals as required from time to time. The total number of positions proposed is six less than the total number of permanent staff until recently employed, and one less than the total number of permanent staff employed at the present time. It is proposed to give general authority to the medical officer of health to engage temporary assistant medical officers at the fever hospitals when the numbers of patients under treatment are in excess of the numbers with which the permanent staff can deal. The financial effect of the proposals will be a net saving of £2,605 a year.

Droitwich Spa

Many members of the British Medical Association who make the Pilgrimage to Worcester on Sunday will, during the afternoon, be the guests of Droitwich Spa. Motor coaches will leave the Cathedral, King's School Playground, Worcester, at 3 p.m., arriving at Brine Baths Park at about 3.30 p.m. Visits will be paid to the baths and the clinic, which adjoins the Park, and arrangements have been made by which the visitors, in small parties, will be conducted over the whole of the establishments, several of which have been reconstructed during the last few months. Extensive alterations and improvements are still in progress. The estimated cost, including capital expenditure, reconstruction of buildings, town planning, the construction of roads, etc., of the Droitwich Spa scheme is over £500,000, of which £260,000 has already been invested and spent. The next feature to be put in hand is a winter garden, and others include an open-air brine bath (diluted to the specific gravity of sea water) and a "Lido," which by nature of its construction will not be entirely dependent on the weather. Recent additions have been the establishment of a research department, under the control of a resident biochemist and bacteriologist; and the installation of a modern *x*-ray apparatus.

Ireland

Canadian Medical Visitors in Ireland

Members of the Canadian Medical Association who will be attending the Centenary Meeting of the British Medical Association arrived in Belfast on July 8th, where they were entertained by members of the Ulster Branch of the B.M.A. and the Ulster Branch of the Overseas League. Their visits included the Belfast hospitals, where they were shown many interesting cases. On Sunday, July 10th, they proceeded to Dublin, where they were met by members of the Leinster Branch and a ladies' committee specially formed for the purpose. They visited the principal hospitals, including the Rotunda, and many other institutions in and around Dublin. They left for Edinburgh on July 11th.

The National University of Ireland

In October next the National University of Ireland will enter on the twenty-fifth year of its legal existence, and, in view of the special significance of this year in the religious and national, as well as international, life of the Irish people, the Senate of the University has brought out a beautifully printed and finely illustrated volume[1] which is modestly called a handbook, giving a full account of its history and present activities. The Chancellor of the University is Mr. Eamon de Valera, B.A., B.Sc., Higher Diploma in Education, and the editor of this memorial work is the Rev. T. Corcoran, S.J., D.Litt., professor of the theory and practice of education in University College, Dublin. The chapter headed "Towards the National University" shows that in 1850 the Queen's University of Ireland for higher education was established with constituent colleges at Belfast, Cork, and Galway; this scheme, however, was from the first opposed by national leaders, such as O'Connell and MacHale. As a result the Catholic University was founded in 1851 by Pope Pius IX, and John Henry Newman (1801–90) was appointed as Rector; unfortunately the University did not receive any State support, Cardinal Newman's forte was not organization, and the number of students was never in any way commensurate with the educational needs and wishes of the main body of the Irish nation. In 1907, Mr. Augustine Birrell, then Chief Secretary, came to the rescue by providing for two new teaching universities quite apart from that of Trinity College, Dublin, which was founded by Queen Elizabeth in 1591–2. Thus Queen's College, Belfast, became a unitary college and university, and the colleges of Dublin, Cork, and Galway became the National University of Ireland in 1898, with His Grace the Most Reverend W. J. Walsh, Archbishop of Dublin and Primate of Ireland as Chancellor and Michael Francis Cox, M.D., as its first chairman of Convocation. The widespread fields of activity covered by the University and its constituent colleges are given in considerable detail, and attention is drawn to their athletic champions by photographs of them in action, among them Dr. P. O'Callaghan of Cork putting the weight. Thumb-nail sketches are given of four distinguished and comparatively recent graduates in science—E. J. Butler, the mycologist, F. D. Murnaghan, the mathematician, T. A. McLaughlin of the Shannon power electric scheme, and J. J. Drumm of the Drumm traction battery. There is an impressive portrait of the anatomist, the late Bertram G. A. Windle, who was President of University College, Cork (1909–19), and Vice-Chancellor of the National University (1916–18).

[1] *The National University Handbook, 1908–1932.* Dublin: Published for the Senate at the Sign of the Three Candles in Fleet Street.

Spread of Whooping-cough in Belfast

The Ministry for Home Affairs, in a letter to Castlereagh Rural District Council, stated that in consequence of a case which had recently come under its notice, in which a child who was receiving treatment for whooping-cough in Belfast was taken to and from the city in a bus, it appeared to be desirable to draw attention to the illegality and danger of conveying infected persons in public vehicles. On one of the visits the child was found to be suffering from scarlet fever, and was taken home by train. While the Ministry believed that, in the case of other infectious fevers, patients were very seldom conveyed in public vehicles or allowed to mingle with other persons, there was reason to think that the same restraint was not exercised in the case of whooping-cough. It was illegal for those in charge of a person suffering from any dangerous infectious disease to expose the patient, without proper precautions, in a street, public place, or public conveyance, and a person suffering from whooping-cough in the infectious stage should not be allowed to mingle with other people or to enter any public vehicle. Notices should be posted up drawing attention to the danger, as well as to the illegality, of the practice. Dr. Milligan, medical superintendent to the council, said it was very necessary to put up such notices; there seemed to be an idea abroad that care need not be taken in regard to infection from whooping-cough. Recently, however, six deaths had been reported inside the city as due to whooping-cough. It was a more serious disease than some parents thought.

Correspondence

THE HUNDREDTH BIRTHDAY

A VETERAN'S GREETINGS

SIR,—In 1066 the Battle of Hastings started a new epoch in English history and in 1832 Sir Charles Hastings initiated a fresh era in British medicine. The Association which he then brought into being has, for the last hundred years, exercised a decisive and wholesome influence on medical science, practice, and policy in this country, and as one of its oldest members—I joined it in 1866—I should like to congratulate it on this its centennial birthday and to express my sense of personal obligation to it.

The testimony borne to the signal and manifold services rendered by the Association to the profession and the public will, on the occasion of its centenary celebration, be overwhelming, and for myself I need merely say that during my long connexion with it I have found it a very present help in times, not of trouble, but of hard work and strenuous endeavour. It has supplied me with a continuous post-graduate education, kept me in touch with the times, and widened the boundaries of friendship.

Were I to jot down all the pleasant memories, and sad memories too—for there are tiers of vacant chairs—which this anniversary conjures up for me, a ream of paper would not contain them. I shall not thus transgress, but I would briefly refer to what I might call the adolescent period in the life of the Association, the seventies and eighties of last century, when I took an active part in its affairs, and to pay a tribute to the memory of one who was then, I believe, largely instrumental in extending its usefulness and enhancing its reputation—I mean Mr. Ernest Hart.

Mr. Ernest Hart was a born editor, a singularly gifted and brilliant man, with a broad outlook and a facile pen, a discerner of spirits, who drew around him as contributors to the *Journal* all the best medical talent of the day, and made the Association a power beyond the immediate circle of its membership. In many social questions he effectively intervened, and it was, I believe, mainly owing to his exertions that the Metropolitan Asylums Board was established and an amelioration secured in the condition and treatment of the sick poor.

It was in the second term of Ernest Hart's editorship of the *Journal* that I was enlisted as an occasional writer, and after that I contributed, from time to time, leading articles and notes—poor stuff, I dare say, but poorly remunerated—perhaps more audacious than judicious, but always submitted with confidence because I knew that it would have to pass through the fine sieve of Ernest Hart's critical acumen.

I recall to-day very vividly Ernest Hart's bright and mobile personality, his tact and ready wit, his zeal in promoting the interests of the Association, his friendliness and loyalty to his friends. He had his rivals and detractors, who said unpleasant things of him, but, with plenty of acerbity at hand—for he had cynical tendencies and a quick temper—he never retaliated in kind, but confined his contempt to a curl of the lip. Of stupidity he was of course intolerant, but he pushed it gently and jokingly aside, while he was keenly sympathetic with all good work and eager to encourage research.

In relation with Ernest Hart's conduct of the *Journal* of the Association at the time to which I am referring the assistance given him by Mrs. Ernest Hart should not be forgotten. Of cultivated tastes and philanthropic aims, like her sister Dame Henrietta Barnett, she was her husband's helpmate in the fullest sense. In their homes, first in Queen Anne Street and then in Wimpole Street, she used to assemble the contributors to the *Journal* in pleasant social intercourse, and in these ante-typewriting days, when there was a comparatively small clerical staff, she gave her husband secretarial aid, for which her medical education specially qualified her.

Of the merits of Mr. Ernest Hart's successor as editor of the *Journal* it would be superfluous for me to say anything here. He is still a living influence amongst us. His praises are in the mouths of a multitude who knew him well and profited by his labours. On his retirement and on his death his services were glowingly appreciated by those best able to judge of them. Much as we are indebted to our Council and officials it will not, I think, be gainsaid that Sir Dawson Williams was for long years the core of our Association, unobtrusively but jealously and successfully maintaining its prestige and building up the prosperity it now enjoys. *Circumspice!*

A friend of mine of early days—we both had ties with Dumfriesshire—Sir Dawson Williams was to my thinking all that the director of a great journal like ours should be in days like these. He brought to the performance of his responsible and ever-expanding duties sagacity, prudence, suavity, and composure, was firm but conciliatory, and had a single eye to the honour and advancement of the profession he adorned and loved.

The progressive impulse imparted to the *British Medical Journal* by former editors is, I feel sure, operative to-day, and is speeding it on its way. The *Journal* is representative of an Association with no narrow or selfish aims, but ambitious of the betterment of mankind. The Association seeks to encourage biological research and clinical observation, to disseminate sound knowledge, to promote good-fellowship, and uphold a high ethical standard amongst its members, and to restrain, as far as the law allows, the chicanery and imposture that are still so prevalent and pernicious in their effects, but that have one redeeming feature in that they appeal especially to the more weak-minded sections of the community, and may thus tend to the elimination of the unfit.

Great discoveries are imminent. I am afraid few of us can hope to take part in the next centenary celebration of the British Medical Association, although it is impossible to put limits to an aggressive longevity, but those who do so will witness a new heaven and a new earth, less parasitical, more eugenic, free from much of the suffering and sorrow that now afflict us.—I am, etc.,

Crindau, Dumfries, July 19th. JAMES CRICHTON-BROWNE.

DIET AND THE TEETH

SIR,—The communication on the subject of diet and the teeth in the *Journal* of July 9th suggests to us that it may be useful to give a brief preliminary account of the results of some experimental work bearing on the effect of phosphorus in cereals upon calcification.

It seemed to us possible that the significance of the relatively great excess of phosphorus with respect to calcium, in accounting for the "anti-calcifying factor" in cereals, had been dismissed on inadequate grounds. A series of tests were therefore carried out with rachitic rats on diets of the high-calcium-low-phosphorus type, containing 68 per cent. of cereal. The effect of substituting oatmeal for the stock white-flour-maize-meal mixture was to induce greater healing of rickets. This result would be expected in a diet of this type in virtue of the increase in phosphorus content, but the anti-rachitic effect was greatly inferior to that produced by the addition of inorganic phosphate to the white-flour-maize-meal diet to bring the phosphorus content up to that of the oatmeal diet. Though the result might be regarded as confirming the presence of an anti-calcifying factor in the oat-

meal, it might also be explained, wholly or in part, if the phosphorus in oatmeal were less available than inorganic phosphate.

This led us to consider the somewhat neglected question of the dietary value of the phosphorus in cereals; 70 to 80 per cent. of this is present in the form of inositol-hexaphosphoric acid (phytic acid) or its salts. It was already known from the work of Plimmer[1] that this form of organic phosphorus was poorly absorbed by certain animals, and preliminary work indicating that it was a poor source of phosphorus for rachitic rats had been done in America.[2] This last observation we were able to confirm completely. That the low anti-rachitic power of oatmeal in the experiments described above was due to the low availability of its phosphorus was then confirmed by finding that an "artificial oatmeal," made by adding sodium phytate and a little phosphate to the white-flour-maize mixture, was closely equivalent to oatmeal in its influence on the healing of rickets. These results certainly require confirmation with diets of the low-calcium-high-phosphorus type, analogous to those associated with human rickets or dental decay. It may be said, however, that there is definite support from the work of Starkenstein[3] for the belief that inositolhexaphosphoric acid is more effective than phosphoric acid as a physiological precipitant of calcium. The extent to which it interferes with the absorption of calcium in low-calcium-high-phosphorus diets when calcium is the limiting factor has yet to be determined, but it may be that in this sense it is actually an "anti-calcifying factor" more potent than inorganic phosphate, and that it is the free inositol-hexaphosphoric acid in cereals which is responsible for their "anti-calcifying" action. The experiments recorded by Professor and Mrs. Mellanby, in which the "anti-calcifying" factor is destroyed by acids or by germination, are in accordance with the conversion of inositol-hexaphosphate into free phosphate, which, on this preliminary hypothesis, would be less toxic.—We are, etc.,

HILDA M. BRUCE.
R. K. CALLOW.

National Institute for Medical Research, Hampstead, July 12th.

THE ORIGIN OF TUMOURS

SIR,—In his letter to the *British Medical Journal* of July 16th Mr. Lockhart-Mummery writes:

"It may be, though we have no proof of the fact, that the fowl tumours are produced by inoculation of the chromosomes of the mutated genes, and these chromosomes are capable, when inoculated into a suitable stroma of another fowl, of re-establishing themselves as tumour cells."

May I ask Mr. Lockhart-Mummery whether he believes that a chromosome can grow into a complete cell? And further, since fowl tumours may be dried and retain their activity for years, whether he believes that a chromosome may be desiccated and retain its power to grow again into a cell?—I am, etc.,

Mill Hill, N.W., July 18th. W. E. GYE.

"FALLEN IDOLS"

SIR,—When one reads letters whose pivot is the notorious appendix one asks oneself the question, "What is the possible, if not probable, effect on the young practitioner?" It is because some might be persuaded by the glamour of a great name to take the view of the writer, Sir James Berry, in the matter of treatment of that oft-offending member, that I feel impelled to make a few comments on the subject.

My recollection of licensed practice goes back, too, to 1885. I also remember that at my London hospital cases of so-called "typhlitis" and "perityphlitis" were admitted and treated medically, and, I agree, most of them got well—well, that is to say, at the time of leaving. What happened to them subsequently I do not know, but I could guess. But I never heard it suggested that the appendix was connected with the phenomena, and "appendicitis" I never heard of until about 1894. The now familiar term became popularized about the time King Edward VII was operated on by Sir Frederick Treves, before his coronation.

In his letter Sir James Berry does not mention one of the numerous diseases or complications which we now associate so largely with the appendix. Of "perityphlitis" I saw a fair sprinkling in London and the provinces. But the cases were not numerous. If "appendicitis" and "perityphlitis" were really synonymous then surgeons would indeed have but little to do in that connexion. The very fact of feeling a smooth, rounded, tender swelling over the appendix area is in itself an indication that Nature is making a tremendous, and often successful, effort in "curing" the result of a dangerous focus of infection. She proves, by her exhibition of the "lump," that she has shut off that focus from surrounding vital parts, at the same time giving the victim the chance to call up his reserves and the opportunity for neutralizing the poison and absorbing the pus. That is why, I presume, those obvious cases so often determined favourably, when they did not burst into the bowel.

But it is the other, more important and less easily diagnosed, complications of the inflamed appendix that have led in the past, and would lead in the future, to terrible mortality, did not surgery intervene. No mention is made of such events as the following, which I well remember in those far-off days, and which, in the light of present knowledge, I have no doubt were directly or indirectly caused by a diseased appendix.

1. "Acute peritonitis" diagnosed as such, but cause unknown; inoperable, death.

2. "Stoppage": abdominal pain, constipation, vomiting, distension. Sometimes operation, but no cause found; or regarded as inoperable—death.

3. "Stoppage," but not complete. Operation, constricting band removed, recovery; but no search for origin of band.

4. A patient treated for many years for kidney and bladder trouble; subsequent operation revealed an appendix anchored to an old abscess site in the bladder wall.

5. Cases of psoas abscess, without evidence of spinal disease.

Then taking more recent experiences: (*a*) the acute fulminating appendix abscess with perforation, operation, recovery; (*b*) the acute appendicitis caused by a stercolith just about to perforate; (*c*) the cases of chronic dyspepsia with attacks of colic, due to stercoliths.

One could go on interminably mentioning cases, mild or grave unto death, all resulting from the same cause or its complications.

How were all these treated in those old days? If diagnosed at all, or if operated on at all, the appendix was certainly never discovered as the true culprit. Here is where the gross mortality lay, not in the protected cases of "perityphlitis." Again, regarding the mortality of operative surgery in the 'eighties and 'nineties: is it fair to compare the surgical knowledge and technique of those days with the 'thirties? Surely not. The removal of the appendix to-day, and especially if selected, is in skilled hands practically without risk, and I think it is desirable that the young practitioner should hold the belief, as I do, that every appendix having once given

[1] Plimmer: *Biochem. Journ.*, 1913, vii, 43.
[2] Eddy, Muller, and Heft: *Journ. Biol. Chem.*, 1922, l, Proceedings xix.
[3] Starkenstein: *Arch. f. exp. Pathol. Pharmacol.*, 1914, lxxvii, 45.

evidence of inflammation is suspect, and the sooner it is removed the better. And this, not because the patient could not get over the attack without operation, but because of the possible recurrence under less favourable circumstances, and of the hundred-and-one complications and sequels which might lead to an unhappy life or even a premature death. My advice to the practitioner is: improve your examination technique in order to diagnose the case *early*—then call in the surgeon.—I am, etc.,

Folkestone, July 10th. G. FRANCIS SMITH.

THE " NORMAL " TEMPERATURE

SIR,—The painstaking observations of Professor Murray Lyon and Dr. H. L. Wallace on the mean temperature in afebrile hospital patients, in your issue of May 28th (p. 980), and the subsequent correspondence, induce me to ask whether there is any significance in the difference between oral and axillary temperatures taken simultaneously. Recent observations on a female patient, aged 40, with inflammation in the lower abdomen—probably appendicular—showed that the difference between the oral and the axillary temperatures may be as much as 2.4°. A large number of observations made with two thermometers—one tested against the other—showed that with an oral temperature of 101.4° the axillary temperature was 99.4°—a difference of 2°. The differences between the two temperatures fluctuated between 1.6° and 2.4°.

It is usual to regard the oral temperature as normally 0.5° higher than the axillary, and it may be that a wider range than this has some clinical significance. Skin temperatures vary with the vasomotor control of the blood vessels of the skin, and that local variations can be induced by the central regulating mechanism is seen in cases of hemiplegia after the initial onset, when the temperature on the paralysed side may be 2° or 3° higher than on the sound side. Had I taken the temperature in the groin in my patient instead of in the axilla it might have more nearly approximated the oral temperature. Evidently there is a good deal yet to be learned from observations on temperature, and it is to be hoped that Professor Lyon and Dr. Wallace will continue their investigations.—I am, etc.,

Warrington, July 10th. J. S. MANSON.

LIMITATION OF ULTRA-VIOLET THERAPY

SIR,—The limitations of ultra-violet therapy which you outline in an annotation in the *Journal* of July 9th could be considerably extended if more exact methods were adopted by the application of ultra-violet rays to local conditions. The expensive and complicated lamps usually sold by the instrument makers are doubtless quite sufficient for general applications, where the resulting benefits are vaguely described as " a sense of well-being." They are, however, often unsuited and inefficient for the treatment of local lesions, such as ulcers, tinea cruris, tinea pedis, incipient boils, etc., the treatment of which is under the more definite test of the healing of the ulcer, the disappearance of the tinea, and the abortion of the boil after two or three applications of a suitable radiation.

Many dermatologists and many other medical men, with little experience of electrotherapy and actinotherapy, fall an easy prey to the seductive wiles of an enterprising salesman, and are induced to purchase a beautifully chromium-plated apparatus—fitted with many useless movements and other unnecessary gadgets, for a sum of £40 to £80—which is, nevertheless, relatively useless for the effective administration of local treatments. On the other hand, a tungsten arc lamp, capable of carrying 20 amperes and most efficient for either local or general treatment, can be purchased from a salesman of cinema or magic lantern lamps for £3 or £4. Three main factors govern the administration of U.V.R.: (1) the type of radiation ; (2) the intensity of the electrical energy ; and (3) the distance at which it is applied.

(1) The type of radiation.—The radiation from the tungsten arc extends throughout the ultra-violet region to the region of atmospheric absorption, beyond which its extension would be obviously of no practical value. Throughout this region its spectrum is the most continuous of any of the sources of ultra-violet radiation. The valuable work of Schunk in 1915 confirmed these points by his spectroscopic examination of all the known sources of U.V.R. ; he moreover found that the tungsten arc was the most efficient source for the production of a cutaneous erythema.

(2) The intensity of the electrical energy by means of which the radiation is applied.—This, though certainly one of the most important points, is probably the one most disregarded. Its great importance is shown clearly by the early work of Henri Cernovodaenu and Victor Henri (*Compt. Rend. de l'Acad. des Sci.*, 1910, cli, 724). These workers found that a twenty-four-hour culture of colon bacilli was completely sterilized in one second at a distance of 20 cm. with a current of 4.7 amperes and a voltage of 140 ; whilst with 2.3 amperes at a voltage of 23 an exposure of 300 seconds was required to sterilize the culture. This serves to explain why the 5-ampere tungsten lamps of electro-medical commerce are so relatively ineffective in the treatment of tinea and impetigo when compared with the 15-ampere tungsten arc lamps. It also suggests why some electrotherapists employing the higher voltages and amperages are able to abort boils and cure alopecia areata, whilst those employing currents of lower intensity fail to obtain satisfactory results. The swaged tungsten rods of 1/4-inch diameter will burn steadily in the arc at a potential of 80 volts or more.

(3) The distance at which the treatment is applied.—The effect of the radiation varies as the square of the distance. It is consequently of advantage to apply the radiation with its source as near to the part under treatment as possible. It is for this reason that the Kromayer lamp, which can be applied directly on the part treated, possesses certain advantages. But this direct application, apart from the complicated and delicate structure of the lamp, posesses certain disadvantages. The part under treatment is hidden from view during the application, direct contact is unsuited for ulcerating and suppurating surfaces, the radiation cannot be readily concentrated upon the apex of an incipient boil, and the radiation cannot be concentrated satisfactorily by this means to areas such as the interdigital clefts.

The 15-ampere tungsten arc lamp is usually employed at a distance of twelve inches when administering local treatment ; but if a strong reaction is desired the distance may be reduced to six inches. Applied in this manner, and when wearing Crookes glasses in place of the usual protective opaque or coloured glasses, the operator is able to detect a faint erythema, gradually developing in intensity to a deep red as the application proceeds, and, as this initial heat erythema bears a definite relation to the subsequent actinic erythema, he is able, when he has gained experience in the method, to obtain the degree of actinic reaction that he requires. By this means, and by this means only, can the dosage be accurately regulated to the varying susceptibilities of different patients ; the blondes more readily, and the brunettes more slowly, develop the two types of erythema. The disseminate type of neuro-dermatitis and those who have a short time before applied irritating

lotions are unsuited for this test, as, indeed, they are for any form of actinotherapy. By means of cardboard shields, with apertures of varying shapes and sizes, the treatment can be concentrated and localized on any spot or area. By employing a quartz condenser lens the radiation can be accurately focused and thereby concentrated upon the apex of an incipient boil, the further development of which is thereby arrested. Tinea pedis, a condition seldom met with in this country, but common in the Tropics and the United States—a condition which is very resistant to ordinary remedies—may be effectively treated by strong application to the affected portions of the soles of the feet and, by focusing the radiation by means of the condenser lens, on the interdigital clefts. A severe and long-standing case of this kind which lately came under my care was completely cured by two treatments administered in this manner.

Such results as these are unobtainable from the employment of quartz and carbon arcs, and the failure of American dermatologists to obtain satisfactory results in the treatment of boils and alopecia areata may be due to the fact that in America the tungsten arc is not used and is practically unknown.

We have certainly not reached as yet the limits of the useful application of U.V.R. ; but it is not so much the extension of these limits that is required as the more universal application of U.V.R. to those cases in which its curative action has been indisputably demonstrated. Few things, for instance, create a worse impression of the old dermatological methods than those cases of impetigo which, after weeks of unavailing treatment by ointments and lotions, are completely cured by one or two treatments of U.V.R. Such instances are of quite common occurrence in the practice of electrotherapy, and the remark of the patient is almost invariably: "Why was I not told of this before?"—I am, etc.,

Oxford, July 13th. W. J. TURRELL.

CONGENITAL MALFORMATION OF THE HEART IN SUCCESSIVE PREGNANCIES

SIR,—May I submit the following in reference to Dr. Gooch's letter which occurred in the *Journal* of May 28th? Although there is no doubt that there are inherited factors at the basis of the congenital heart lesion described by him in two sisters, we know too little about this condition from the hereditary standpoint to make a definite pronouncement as to its appearance in this family. I think it is certain, however, that if neither parent has any evidence of a congenital heart lesion the chances are at least even in favour of her next child being normal. The probabilities may even be greater than that—they may be three to one, or more, in favour of the next child being normal.

I have found the following instances of more than one child in the family being affected with congenital heart lesions, which show that although more than one may be affected that does not preclude there being normal offspring. Hess reported three brothers with cyanosis and congenital heart lesions. Jewesbury found, in a family of five, two sisters with signs suggestive of patent ductus arteriosus. Lockyer recorded two children with congenital heart lesions in a family of seven. Smith found patent ductus arteriosus in identical twin boys dying of bronchopneumonia at about 6 weeks. Sprague described a family in which there were numerous cases of heart disease—type not specified: in this family there were two sisters dying of congenital idiopathic cardiac hypertrophy at 6 and 7 months respectively. Weber reported a family of five children three of whom showed cyanosis, dying at 5 months, 3 days, and 2½ years respectively.

Dr. Gooch's patient, having had two children with heart defects, may have two who are normal, although it is as impossible to assure her of the normality of the third child as it would be to assure a gambler that the next throw of the coin would bring heads when the last one has shown tails.—I am, etc.,

MADGE THURLOW MACKLIN, M.D.

University of Western Ontario, Canada, July 6th.

TUBERCULOSIS AND THE MILK SUPPLY

SIR,—At the Mansion House, on July 11th, Lord Dawson referred to the elimination of tuberculosis in cattle as "a long and costly process." The initial cost would be considerable, because provision would have to be made for segregating infected from non-infected animals, not only in stabling, but also on pastures. The infected bovine spreads infection to its kind by the contamination of pasture with tubercle bacilli in dung. Tubercle bacilli are present in the dung of animals with pulmonary disease, as well as in the dung of those with intestinal disease. The cost of segregation on the results of the tuberculin test would be prohibitive for the ordinary dairy farmer, but might well repay the owners of pedigree herds. I have in mind a bull for which the Argentine offered £900 provided it passed the tuberculin test. The animal failed to pass the test.

For the protection of infants and children pasteurization is practicable and inexpensive. On the other hand, it may well be that adults are immunized by small doses of living tubercle bacilli in milk, and that it would be a retrograde measure to produce a virgin soil for the tubercle bacillus. Nevertheless, this does not excuse the apathy of certain Government Departments in regard to the incidence of bovine tuberculosis.

Some years ago I wished to know the number of butchers convicted in England for selling tuberculous meat. I wrote to the Home Office, who did not know, but who referred me to the Local Government Boad, who did not know, but who referred me to the Board of Agriculture, who did not know. Nobody knew. In the end I wrote to the Bureau of Animal Industry at Washington, and obtained the reports of the United States Federal inspectors at Liverpool and Southampton on the number of animals refused for export by reason of their reactions to the tuberculin test. Over 40 per cent. reacted!—I am, etc.,

London, W.8, July 18th. HALLIDAY SUTHERLAND.

INSULIN DIABETICS AND CARBOHYDRATE DIET

SIR,—In your issue of July 9th Dr. C. S. D. Don, in his article on the progress of insulin diabetics on a liberal carbohydrate diet, states that it was possible in many cases to reduce the injection to once daily. It would be interesting to know, in connexion with such liberal carbohydrate diets, what was the average maximum insulin dose that he found to be satisfactory when given at one injection.—I am, etc.,

Radlett, July 12th. A. J. WATSON.

THE "MEDICAL DIRECTORY"

SIR,—Our constant endeavour is to maintain the accuracy of our annual volume. To achieve this object we rely upon the return of our schedule, which has been posted to each member of the medical profession. Should the schedule have been lost or mislaid, we will gladly forward a duplicate upon request. The full names of the doctor should be sent for identification.—We are, etc.,

40, Gloucester Place, Portman Square, W.1, July 16th. J. & A. CHURCHILL, Publishers of the *Medical Directory*.

Obituary

JOHN ABERNETHY WILLETT, M.D., M.R.C.P.

Senior Surgeon, Samaritan Free Hospital and the City of London Maternity Hospital

Dr. John Abernethy Willett, who died recently in his sixtieth year, was the second of the five sons of Alfred Willett, the distinguished surgeon of St. Bartholomew's Hospital, his mother being the only daughter of Sir George Burrows, President of the Royal College of Physicians of London, 1871–5. John Willett was educated at Westminster and at Oxford, and studied medicine at St. Bartholomew's Hospital. He obtained the conjoint diplomas in 1899, and in the next year graduated M.B. at Oxford, taking the M.R.C.P.Lond. three years later, and proceeding M.D. in 1906. He held the usual resident appointments at St. Bartholomew's, where, afterwards, he was chief assistant in the gynaecological and obstetrical department, and demonstrator of practical obstetrics in the school. Though failing to secure a place on the staff of his hospital, he made a fine impression on his colleagues by the character of his work and the standard of his teaching. After a period as resident medical officer at Queen Charlotte's Lying-In Hospital, he was elected to the staff of the City of London Lying-In Hospital and of the Samaritan Free Hospital for Women. These latter appointments he was holding when he died, though he had just sent in his resignation of both. He was also gynaecologist to St. Andrew's Hospital, Dollis Hill.

A colleague writes:

The contribution to obstetrics by which Willett will best be known is his paper, published in 1925, on the treatment of placenta praevia by continuous weight traction. This method was based on a very simple conception, and, used in suitable cases, its great simplicity and ease of performance have real advantage over more complicated measures. The results of the use of Willett's forceps in this serious obstetrical condition have been good, and have led to an increasing resort to this method of treatment. Both on the staff of the Samaritan Hospital and at the London Maternity Hospital he earned the particular gratitude of the nursing staffs, for he was deeply interested in their share of the work, and spared no trouble in making both the scientific and the practical sides of nursing accessible to them.

Joe Willett, as he was generally known in his own small and intimate circle, was a very simple man, both in his professional and in his ordinary life. He was not ambitious in the usual sense of the word, and did not strive for public fame or consciously seek the approbation of his fellows. So simple was his life-plan that it seemed as if early in his career he had recognized his scope and had made up his mind not to go outside it. Within this scope he was admirable in all he did and said, and was recognized as an absolutely trustworthy man whose views were sound. The possession of a private income sufficient for his needs enabled him to lead a quiet life (he even kept his name out of the Telephone Directory) and to avoid the fever and fret of private practice. His pleasures and pursuits were just what would be expected: fishing, good music, and golf—but all enjoyed in a moderate and simple manner. Willett was a sound clinician and a born teacher, and these were the parts of his work which specially appealed to him. He gave of his best to the hospitals he served and to the pupils he taught—medical students and post-graduates, midwives and nurses. There was nothing he enjoyed more than giving bedside instruction at the hospital or at the ante-natal clinic. Though the reasons could be easily understood it was a constant source of wonder and regret that, with his instinct for clinical teaching, he had never attained a position on the staff of a teaching hospital. In place of it he threw himself whole-heartedly into the teaching of midwives, and helped the Midwives Institute, as a lecturer, on its advisory committee, and in organizing courses of training and examination for the midwife-teacher's certificate. When the Central Midwives Board took over this examination last year his advice and his experience as an examiner were invoked by the Board.

It may be asked whether one who wrote so little and spoke so seldom at medical societies exerted any influence on current obstetric thought? He did, in a quiet way, and almost entirely by personal contact with his colleagues and pupils. His outlook was not so much conservative as limited ; and the limitation of his activities was imposed by a natural diffidence and an inborn dislike of competition with other men and other opinions. Willett will be missed by many friends, who loved him for his simple character and his loyalty to high ideals of conduct.

BEDFORD PIERCE, M.D., F.R.C.P.

Formerly Medical Superintendent of The Retreat, York

A well-known figure in British psychiatry is removed by the death of Dr. Bedford Pierce on July 8th at Harpenden. Bedford Pierce, who was best known for his thirty years' medical superintendency of The Retreat, York, was born at Manchester in 1861. He was educated at the Friends' School, Croydon, and at London University, entering St. Bartholomew's Hospital in 1884, and graduating in 1888 with first-class honours in forensic medicine. He continued his medical education in Vienna, to which he went with his friend and fellow graduate, Dr. W. G. Willoughby, whose term of office as President of the British Medical Association is now ending. In 1890 Pierce took the M.D.Lond., and, after a period as clinical assistant at the Royal Bethlem Hospital and at Morningside, Edinburgh, he was appointed medical superintendent of The Retreat in 1892, the year of the centenary of that institution. Himself a member of the Society of Friends, he was in fullest sympathy with the ideals which had actuated its Quaker founders, the Tuke family of physicians and philanthropists of York, and which, pursued throughout its history, made The Retreat a model institution for the enlightened treatment of the insane without unnecessary restraint or irksome discipline. At the same time he introduced modern principles of mental hospital administration, and especially devoted himself to the improvement of the training and status of mental nurses. He laid mental nurses in general, and his own in particular, under a great debt, doing much to improve their education and raise their standard of examination. Under his direction a new nurses' home was established at York, he instituted the delivery of annual lectures to nurses by men of eminence, and for years he sent groups of them for conducted holidays abroad. During his service at The Retreat he acted for three years as lecturer on mental diseases at the University of Leeds, in which city he had a consulting practice. Bedford Pierce was elected a Fellow of the Royal College of Physicians of London in 1905.

Within the societies devoted to his specialty he played a conspicuous part. He filled the chair of the Royal Medico-Psychological Association and of the Section of Psychiatry of the Royal Society of Medicine, and he was vice-president of the Section of Neurology and Psychological Medicine at the British Medical Association Meeting at Bradford in 1924. His attainments were recognized abroad, and he was an associate member of the Société Médico-Psychologique of Paris, and a member of the Society of the New York Hospital.

Dr. Pierce retired from The Retreat in 1922, in which year he served on the departmental committee to investigate the well-remembered charges made by Dr. Montagu Lomax against mental hospital administration in general. After his retirement he paid visits to America, Africa, and India, and for a time he served as Lord Chancellor's Visitor. In 1930 he was made a temporary member of the Board of Control, but resigned the position in the following year owing to ill-health. Several of his writings were contributed to this *Journal*, including one on diagnosis in states of depression and another on the absence of facilities for treating mental disorders in their early stages. He wrote also on the history of psychiatry, on recovery from mental disorders, and on the training of mental nurses. His last years of retirement were spent with his married daughter at Harpenden, where, although his activities were restricted, he maintained his outlook on professional affairs. He was a member of the St. Albans Division of the British Medical Association until his death.

Among his patients and professional colleagues Bedford Pierce was a well-liked man, socially popular, a good speaker, vivacious and amusing, always courteous, and with an extremely practical mind. He gave the impression of a man in love with life, on good terms with all his fellows, and an earnest student in his specialty. He had been for six years a widower, and leaves a son and daughter, the latter—Dr. Marjorie Garrod—a member of the medical profession.

THOMAS FAWSITT, M.R.C.S., L.R.C.P.

Consulting Surgeon, Oldham Royal Infirmary

We regret to announce the death at Oldham, at the ripe age of 86, of Dr. Thomas Fawsitt, one of the oldest and best-known practitioners in South-East Lancashire. Educated at Rugby School under Dr. Temple, who was anxious for him to be ordained, Fawsitt soon made up his mind to read "physic," and passed through the Manchester School of Medicine and Guy's Hospital, obtaining his M.R.C.S., L.R.C.P. in 1867. He then began practice at Oldham, working with his uncle, Henry Halkyard, F.R.C.S., who in turn had taken over the work of Dr. Fawsitt's father. In 1872, when the local infirmary was opened, he became a member of the visiting staff and did invaluable work there up till 1905, after which date he was elected consulting surgeon. Chairman of the Oldham Division of the British Medical Association from 1923 to 1925, he was president of the Lancashire and Cheshire Branch in 1925–6, and had been a Representative from 1903 to 1907.

A correspondent adds: Fawsitt was a very remarkable man. Wiry of build, possessing an indomitable will-power and an infinite capacity for hard work, he built up a very large practice during the fifty years he was engaged upon it. He soon made a name for himself as an able and dependable doctor—indeed, it is not too much to say he became an "institution" in Oldham. He filled the positions of president and treasurer of the Oldham Infirmary, retaining the latter post till the time of his death. Active not only in advancing the professional efficiency of this institution, he was also a liberal benefactor during his lifetime, and by his will left the sum of £10,000 to augment its funds. A man of large heart and simple piety, he gave handsomely to all sorts of charities—medical, ecclesiastical, and lay—any, in fact, that could claim help in its distress; nor did he turn aside from individuals who applied to him and needed a helping hand in times of difficulty. Such a man was Thomas Fawsitt to his patients—the beloved and trusted doctor, and a household name which everyone loved. This was publicly expressed on his retirement from active practice in 1920, when he was made a Freeman of the borough and presented with his portrait in oils—now in the Borough Art Gallery—subscribed for by the general public. His funeral was the occasion of a remarkable demonstration of affection and respect, many thousands of people lining the route to St. Peter's Church, where the service was held, to show regard for and appreciation of their beloved doctor as he passed for the last time.

A. H. G.

The following well-known foreign medical men have recently died: Professor KARL SPIRO, director of the Institute of Physiological Chemistry at the University of Basel, aged 65; Dr. FERNAND DAUBRESSE, president of the Medico-Chirurgical Society of Brabant; Dr. POWILEWICZ, senior honorary chief of the Havre Maternity Hospital; Professor MAX MARTENS, head of the surgical department of the Bethany Hospital, Berlin, aged 63; Geheimrat ERNST MEYER, director of the psychiatric clinic at Königsberg, aged 61; Professor HERMANN THOMS, formerly director of the Pharmaceutical Institute at Berlin University, aged 73; and Professor JULIUS KENÉZY, director of the Women's Clinic at Debreczen, aged 51.

Universities and Colleges

UNIVERSITY OF OXFORD

At a congregation held on July 16th the following medical degrees were conferred:

D.M.—O. L. V. de Wesselow.

B.M.—H. G. N. Cooper, D. G. Ferriman, E. Braithwaite, J. A. Nunn, W. S. Tegner, S. W. T. Bentall, P. M. F. Bishop, E. J. Williams, F. W. Brown.

UNIVERSITY OF LONDON

LONDON SCHOOL OF HYGIENE AND TROPICAL MEDICINE

The following candidates have been approved at the examination indicated:

ACADEMIC DIPLOMA IN PUBLIC HEALTH.—C. A. Bozman, C. J. H. Brink, C. G. H. Campbell, E. J. de Verteuil, Mary G. H. Dickson, A. R. Forbes, Agnes B. Francklyn, T. O. Garland, J. C. P. Grey, R. D. Gross, F. B. Khambatta, *G. Macdonald, H. A. Mackenzie-Wintle, R. B. Mayfield, *R. M. Morris, L. E. J. Poulier, A. M. Samarasinghe, A. R. Thompson, K. C. Uppal, T. W. Ware, H. B. Wilson. (*Part I*): R. J. I. Bell, J. L. Burn, H. G. H. Butcher, L. P. Clarke, F. G. Macdonald, T. L. Narayana, Doris G. Sharvelle.

* Awarded mark of distinction.

UNIVERSITY COLLEGE

The following awards have been made in the Faculty of Medical Sciences:

Entrance Scholarship: D. F. Eastcott.
Entrance Exhibitions: M. Albert and J. Colover.
Bucknill Scholarship: A. V. Le Vay.
Bayliss-Starling Memorial Scholarship (Physiology and Biochemistry): C. H. Gray.
Schafer Prize (Physiology): F. G. Young.
Anatomy: Senior Class—Gold Medal, H. H. F. Barns; Junior Class—Silver Medal, J. S. Horn.
Histology and Embryology: Silver Medal, I. Illingworth-Law.
Physiology: Senior Course—Gold Medals, D. V. Davies and J. H. Cobb; Junior Course—Silver Medals, J. Horn and R. C. Tudway.
Organic and Applied Chemistry: Winter Course—Silver Medal, K. D. Fraser.

COMBINED SCHOLARSHIP EXAMINATION

As the result of the combined hospitals university examination, held at St. Thomas's Hospital Medical School on July 11th to 14th, the following scholarships and exhibitions have been awarded:

Guy's Hospital Medical School.—University Scholarship, D. F. G. Moir (Magdalen College, Oxford); Exhibition, P. W. Clarkson (Edinburgh University).

St. Bartholomew's Hospital Medical College.—University Scholarship, J. W. A. Turner (New College, Oxford); Exhibition, G. Blackburn (Clare College, Cambridge), A. R. Kelsall (Clare College, Cambridge), equal.

St. Thomas's Hospital Medical School.—University Scholarship, H. T. Laycock (St. John's College, Cambridge); Exhibition, J. R. Rose (Queen's College, Cambridge).

UNIVERSITY OF MANCHESTER

The following candidates have been approved at the examination indicated:

M.D. (by thesis).—R. J. Batty, W. C. V. Brothwood, †N. S. Craig, †Margaret Egan, *D. Sheehan, *R. Whitehead, C. Wilcocks.

* Gold medal. † With commendation.

ROYAL COLLEGE OF SURGEONS OF ENGLAND

A quarterly meeting of the Council of the Royal College of Surgeons of England was held on July 14th. Lord Moynihan, the President, announced the re-election to the Council of Mr. Wilfred Trotter, F.R.S., and the election of Mr. A. E. Webb-Johnson and Mr. G. Gordon-Taylor.

Sir H. J. Waring was elected President in succession to Lord Moynihan, who has held office for the past six years. Mr. W. Sampson Handley and Sir Percy Sargent were elected vice-presidents. Mr. R. H. Burne (Physiological Curator), Mr. C. F. Beadles (Pathological Curator), Miss M. L. Tildesley (Curator of the Department of Human Osteology), Sir Frank Colyer (Honorary Curator of the Odontological Collection), and Mr. C. J. S. Thompson (Honorary Curator of the Historical Collection) were re-elected to their respective posts. Mr. J. H. Thompson was appointed Bernhard Baron Scholar, and Mr. Laurence O'Shaughnessy was reappointed College Research Scholar.

The Hallett Prize for Anatomy and Physiology was awarded to J. S. MacMahon of Middlesex Hospital and Sydney University, and the third Macloghlin Scholarship for medical students to Herbert Alstead of Wigan Grammar School.

The following lecturers were appointed for the ensuing year:

Hunterian Professors.—Sir Arthur Keith, six lectures on some anatomical subject; Mr. K. M. Walker, one lecture on perurethral operations on the prostate; Mr. P. H. Mitchiner, one lecture on an epitome of the tannic acid treatment of burns and scalds; Mr. J. Paterson Ross, one lecture on sympathectomy as an experiment in human physiology; Mr. H. P. Winsbury-White, one lecture on the paths of infection between the genital and reproductive organs and the urinary tract; Mr. Stanford Cade, one lecture on radiation treatment of buccal and pharyngeal cancer; and Mr. H. Jackson Burrows, one lecture on tissue culture in its relation to surgical pathology.

Arris and Gale Lecturers.—Mr. P. N. B. Odgers, one lecture on the lumbar and lumbo-sacral diarthroidal joints; Professor R. J. S. McDowall, one lecture on the physiology of experimental shock, with special reference to anaesthesia; and Mr. R. W. Raven, one lecture on diverticula of the pharynx and oesophagus, with special reference to the morphological and embryological aspects.

Erasmus Wilson Demonstrators.—Mr. C. E. Shattock, Mr. C. P. G. Wakeley, and Mr. R. Davies-Colley, two demonstrations each in pathology.

Arnott Demonstrator.—Sir Arthur Keith, six demonstrations on the contents of the Museum.

Diplomas of Fellowship were granted to Israel Preiskel and Thomas King, and a diploma of Membership to Eric Rudkin. Licences in Dental Surgery were granted to forty-six successful candidates. Fourteen Diplomas in Public Health, sixteen Diplomas in Tropical Medicine and Hygiene, twelve Diplomas in Psychological Medicine, and eight Diplomas in Laryngology and Otology were granted jointly with the Royal College of Physicians.

The Buckston Browne annual dinner of Fellows and Members will be held on Thursday, November 10th, 1932, and the Lister Memorial Lecture will be delivered by Sir Charles Ballance on Wednesday, April 5th, 1933.

Medical Notes in Parliament

[FROM OUR PARLIAMENTARY CORRESPONDENT]

Before Parliament rose on July 13th, the Royal Assent was given to the National Health Insurance and Contributory Pensions Act.

On July 13th Sir Hilton Young told Mr. Morgan that he had received the report of the inquiry by Dr. Eichholz on the problem of the deaf. It would be published as soon as practicable.

According to an assurance given on July 13th by Sir Hilton Young, all lard imported into the United Kingdom from the Netherlands bears a Government certificate that it is from animals which were free from disease at the time of slaughter. The nature of this certificate precluded its application to any product derived from inedible grease.

Medico-Legal

MEDICAL WITNESSES IN ACCIDENT CASES

The number of motor car cases brought in the High Court is increasing. Among these there is a certain proportion in which a party claims damages for personal injury which he says has been caused by the negligence of the other side, and it often happens that each side calls two or three doctors to give evidence on the question of the injuries. Each of these doctors has to wait about for an uncertain, and usually considerable, number of hours when he ought to be doing his work; he has to give evidence and be cross-examined, a process which most medical men dislike heartily; and he receives a totally inadequate remuneration. The new Rules of Procedure which have been introduced experimentally into the High Court to try to expedite litigation have been much criticized, but at any rate they promise to ease the lot of the medical witness. Among the powers which are given to a judge trying a New Procedure case is that of referring to an expert referee matters concerning the extent and permanence of any injury caused or alleged to have been caused by the negligence of a party. Judges can already refer a whole case to a special referee, but not a special issue, except under this rule. Mr. F. W. Beney, in a recent lecture to the Solicitors' Managing Clerks' Association, explained that in personal injury cases the special referee—presumably a doctor—might find it advisable to examine the injured person in the presence of the doctors of both sides. This should in most cases enable all the medical men to agree, so that there would be no necessity for any of them to be called to give evidence. As the rule stands, the referee furnishes a report to the Court; both sides are allowed to see it, and need not accept it, and it is at the disposal of the judge for his assistance (under the New Procedure there will often not be a jury). The working of the rules is being anxiously watched, and they will probably be amended freely; Mr. Beney suggested as an amendment to this rule that if the parties accepted the report neither should be allowed to call any more medical or expert evidence without ample notice. Under another rule the judge can limit the number of expert witnesses called by either side. If the new procedure has the effect which it promises it will lead to a great saving of medical time and trouble.

The Services

HONORARY PHYSICIAN TO THE KING

Major-General H. C. R. Hime, D.S.O., late R.A.M.C., has been appointed Honorary Physician to the King, in succession to Colonel J. C. Kennedy, C.B.E., late R.A.M.C. (ret.).

DEATHS IN THE SERVICES

Brevet Colonel Sir Bruce Gordon Seton, Bt., C.B., Bengal Medical Service (ret.), died at Edinburgh on July 3rd, aged 63. He was born on October 13th, 1868, the son of the late Lieut.-Colonel Alexander Seton, R.E., was educated at Bart's, and took the M.R.C.S. and L.R.C.P.Lond. in 1891. Entering the I.M.S. as Surgeon Lieutenant on January 30th, 1892, he became Lieut.-Colonel after twenty years' service, Brevet Colonel on June 13th, 1913, and retired on May 20th, 1917. He served on the North-West Frontier of India in the Waziristan campaign of 1894–5, when he was severely wounded, and received the frontier medal with a clasp; and in the Tochi campaign in 1897–8, gaining the medal with a clasp. In the war of 1914–18 he was in command of the Kitchener Indian Hospital at Brighton in 1914–16, was mentioned in dispatches in the *London Gazette* of July 27th, 1917, and received the C.B. on June 4th, 1917. For many years before the war he had held the appointment of secretary to the Director-General of the I.M.S. On March 6th, 1915, he succeeded his cousin, Sir Bruce Maxwell Seton, as ninth Baronet of Abercorn. In 1923 he advanced a claim to the Barony of Gordon, which after six years the House of Lords rejected, while admitting his descent. He was the author of *Cavalry Elementary Veterinary Manual*, 1895; with Lieut.-Colonel Jay Gould, of *The Indian Medical Service*,

1911 ; with Pipe Major J. Grant, of *The Pipes of War*, 1920 ; edited *The Orderly Book of Lord Ogilvy's Regiment in the Army of Prince Charles Edward Stuart, October 10th, 1745, to April 21st, 1746*, 1924 ; and *The Prisoners of the Forty-Five*, 1928. He married in 1895 Ellen Mary, daughter of the late Lieut.-Colonel Frank Armstrong, R.A.S.C., and leaves a widow, two sons, and two daughters. He is succeeded, as tenth baronet, by his eldest son, Lieutenant Alexander Hay Seton, Royal Scots.

Colonel Sir Hormusjee Eduljee Banatvala, C.S.I., Bengal Medical Service (ret.), died at Bombay on July 1st, aged 72. He was born on October 20th, 1859, was educated at Bombay University and at Bart's, taking the L.M.S. at Bombay in 1881, the L.S.A. and L.R.C.P.Lond. in 1882, and the M.D.Brussels in 1883. Entering the I.M.S. as surgeon on April 1st, 1884, he was posted to the Bombay Service, but was transferred to Bengal in December of the same year. He became Lieut.-Colonel after twenty years' service, and full Colonel on April 2nd, 1914, when he was appointed Inspector-General of Civil Hospitals in Assam, being the first Indian member of the I.M.S. to rise to administrative rank, and to hold the appointment of Inspector-General. He retired on April 23rd, 1919, but in the pressure for medical officers then existing was continued in employment as Inspector-General of Jails in Bombay in 1919, in Burma in 1920–1, and in Bihar and Orissa in 1921–2. He served in the Burmese war in 1886–7, taking part in the operations of the 1st Brigade, including the pursuit of Hla Oo, and received the frontier medal with a clasp ; and on the North-East Frontier of India in the Lushai campaign of 1892. He received the C.S.I. on June 14th, 1917, was appointed honorary surgeon to the King on December 22nd, 1917, and was knighted on June 3rd, 1920.

Surgeon Captain James McCardie Martin, D.S.O., R.N. (ret), died in London on June 30th, aged 72. He was educated at Edinburgh, where he took the L.R.C.P. and S. in 1880, and entered the Navy as surgeon in August, 1882, attaining the rank of fleet surgeon on August 28th, 1898, and retiring on February 16th, 1904, with an honorary step in rank as deputy inspector-general, now surgeon captain. When serving as staff surgeon on H.M.S. *Forte* at the time of the Benin expedition in 1897, he was landed with the Naval Brigade, and served in the operations up to and including the capture of the city of Benin, and carried a wounded brother officer, Surgeon Fyfe, R.N., off the field. He was then mentioned in dispatches, and received the African general service medal, with a clasp for Benin, and the D.S.O. In the China war of 1900 he served as fleet surgeon on the battleship *Barfleur*, flagship of Rear-Admiral Sir James Bruce.

Medical News

Delegates and members attending the British Medical Association Centenary Meeting will have an opportunity of seeing some rare books belonging to the Medical Society of London, which will be exhibited at 11, Chandos Street, Cavendish Square, W.1, on July 25th, 26th, and 27th in the afternoon between the hours of 2 and 4.

The Anglo-French Luncheon Club has for many years helped to strengthen the bonds of the *entente cordiale* by entertaining any distinguished French men who visit our shores. On Wednesday next, July 27th, the members of the club are entertaining at luncheon, at the Hotel Victoria, the French guests of the British Medical Association. The chair will be taken by Sir StClair Thomson.

During the Centenary Meeting the Section of Otolaryngology has arranged a demonstration at the Royal College of Surgeons of England, Lincoln's Inn Fields, on Wednesday, July 27th, at 2.30 p.m., when the Toynbee, Cheatle, Onodi, and laryngological collections will be on view. A short introductory address will be given by Sir Arthur Keith, F.R.S., followed by demonstrations of specimens by Mr. T. B. Layton and Mr. Negus.

The Earl of Iveagh will open the Southend New General Hospital on Tuesday, July 26th, at 3.30 p.m. The hospital was first started in November, 1929, when the foundation stone was laid by H.R.H. The Duchess of York. The building in its present state will accommodate 220 patients, including a special ward for twenty-one paying patients, with separate home for sixty-four nurses.

We have received from the Maudsley Hospital, Denmark Hill, S.E.5, the medical superintendent's report, which covers a five-year period ending December 31st, 1931. An account of the report will appear in a subsequent issue of the *Journal*.

The annual general meeting of the West London Medico-Chirurgical Society will be held at the West London Hospital, Hammersmith, W., on Friday, July 29th, at 5 p.m.

The only special course arranged by the Fellowship of Medicine for August is in urology ; this will be given in the new buildings of All Saints' Hospital, Austral Street, West Square. It will occupy the afternoons with clinical demonstrations on cases, and opportunity will be given for graduates to see the work of the hospital and attend operations. Apart from this special course, individual clinics at various London general and special hospitals may be attended. The full list can be had from the secretary of the Fellowship, 1, Wimpole Street, W.1. Definite arrangement is made in the case of each clinic so that graduates do not journey to a hospital only to find the consultant has been called away. Clinics in nearly all subjects in medicine and surgery are available under this rota system, which is open only to members of the Fellowship.

A course on bacteriophages and their significance in medicine and natural science will be held by Privatdozent Dr. Curt Sonnenschein, from August 15th to 19th, at the Institute for Marine and Tropical Diseases, Hamburg.

The ninth International Congress of the History of Medicine will be held at Bucarest under the presidency of Dr. V. Gomoiu from September 10th to 18th. The principal subjects for discussion will be the evolution of medicine in the Balkan countries and the protection of Europe against plague, as well as a number of miscellaneous subjects, such as Goethe and medicine, by Professor Diepgen of Berlin, Robert Boyle and Polydore Vergil, by Professor J. F. Fulton of Newhaven, U.S.A., and Chaucer and mediaeval medicine, by Dr. J. D. Rolleston, who has been appointed the British representative at the congress and delegate of the Royal Society of Medicine.

The tenth International Congress of Psychology will be held at Copenhagen from August 22nd to the 27th, under the patronage of the King of Denmark. The official languages will be English, French, German, and Italian. Further information can be obtained from the general secretary, Studiestraede, 6, Copenhagen K.

The eighth International Conference organized by the International Union against Tuberculosis will be held at The Hague and Amsterdam from September 7th to 9th, 1932, under the chairmanship of Professor Nolen. The following subjects have been selected for discussion: (1) relation between allergy and immunity, opening report by Professor Jules Bordet (Belgium) ; (2) gold therapy, opening report by Professor Sayé (Spain) ; and (3) after-care schemes for the tuberculous, opening report by Dr. Vos (Netherlands). According to a custom which has become established, the Netherlands Association against Tuberculosis will organize a study trip for members of the conference.

The second International Congress for Oto-rhino-laryngology will be held at Madrid under the patronage of the President of the Spanish Republic and the presidency of Professor Tapia from September 27th to the 30th, when the following subjects will be discussed: scleroma, introduced by Professor Belinoff of Sophia ; ozaena, introduced by Professor Costiniu of Bucarest ; otosclerosis, introduced by Dr. Duel of New York ; bronchoscopy and oesophagoscopy, introduced by Dr. Chevalier Jackson of Philadelphia and Professor von Eicken of Berlin ; and the treatment of malignant cases, introduced by Drs. Hautant and Lemaître of Paris, and Drs. Medoux and Sluys from Belgium. Further information can be obtained from the general secretary, Dr. A. Fumagallo, Argensola 16–18, Madrid.

The University of Cambridge has recently re-established the Diploma in Medical Radiology and Electrology, until September, 1936.

The Committee on Local Expenditure, at its first meeting at the Ministry of Health, appointed Sir William Ray, M.P., to be chairman of the committee, and Sir Percy Jackson, LL.D., vice-chairman. Subcommittees were set up on education, housing, public health, public assistance, roads, and agriculture.

At the East London Children's Hospital on July 13th Professor E. W. Hey Groves took the chair for a lantern lecture to the nursing staff on "Surgeons of other lands" by Professor Grey Turner. A vote of thanks to the lecturer was proposed by Sir Cuthbert Wallace and seconded by Mr. Warren Low.

At a meeting of the Osler Club held on July 12th, Dr. R. W. Chapman of the Clarendon Press, Oxford, delivered the fifth Oslerian Oration, on "Book production in the eighteenth century." A discussion followed in which there took part Dr. Robert Hutchison, Mr. H. L. Jackson (chairman of H. K. Lewis's), Mr. J. G. Wilson (managing director of Bumpus's), Sir D'Arcy Power, Mr. Geoffrey Keynes, Dr. R. O. Moon, Mr. R. H. Hill (secretary to the Bodleian Library), Dr. Harley Williams, and Mr. A. M. Muirhead.

At the recent celebration of the three hundred and fiftieth anniversary of the foundation of Warzburg University the rector, Dr. Flury, professor of pharmacology, delivered an address on new methods in therapeutics.

The municipal council of Rouen have decided to call one of their streets after Dr. Charles Nicolle, a native of the city, who has been appointed professor of medicine at the Collège de France.

Letters, Notes, and Answers

All communications in regard to editorial business should be addressed to **The EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W.C.1.**

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names, not necessarily for publication.

Authors desiring REPRINTS of their articles published in the *British Medical Journal* must communicate with the Financial Secretary and Business Manager, British Medical Association House, Tavistock Square, W.C.1, on receipt of proofs.

All communications with reference to ADVERTISEMENTS, as well as orders for copies of the *Journal*, should be addressed to the Financial Secretary and Business Manager.

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The address of the Irish Office of the British Medical Association is 18, Kildare Street, Dublin (telegrams: *Bacillus, Dublin*; telephone: 62550 Dublin), and of the Scottish Office, 7, Drumsheugh Gardens, Edinburgh (telegrams: *Associate, Edinburgh*; telephone: 24361 Edinburgh).

QUERIES AND ANSWERS

Cockroaches

"W. A. M." writes: I should be obliged if you could give me a remedy for clearing beetles out of a house, which will not be injurious to either dogs or cats.

*** Useful information on this and allied subjects will be found in *Home Pests and their Destruction*, by J. S. Bainbridge (W. Heinemann (Medical Books) Ltd., 3s. 6d.), and *The Cockroach: Its Life History and How to Deal with It*, by F. Laing (British Museum, Economic Pamphlets, No. 12, 6d., postage 1d.)

Stings on Throat or Lips

F. J. N. wishes to know "the correct treatment for throat or lip stings."

Prevention of Gnat Bites

Dr. CYRIL R. LUNN (Olton) writes in reply to "J. A. S.'s" inquiry (July 9th, p. 85): I have found efficacious an application of equal parts of ol. eucalypti, ol. verbenae, ol. citronellae.

"Ferri Perchlor." in Skin Disease

Captain J. H. BOULTBEE, I.M.S., writes from Dalhousie, Punjab: May I endorse the remarks by Dr. F. W. Cory (Leeds) regarding the use of liq. ferri perchlor. in skin diseases (April 23rd, p. 784). I tried this in a most intractable case of tinea circinata occurring in a female patient. The rash was very extensive, and covered both hips and part of the loins. The history extended back for three months. The effect of applying liq. ferri perchlor., as suggested by Dr. Cory, was truly magical. Two applications sufficed to clear the whole area. Previously I had tried applications of iodine and ointments containing acid salicyl. or chrysarobin. Very little success had accrued from these, and the iodine applications had definitely made the patient worse. I have been unable to discover this remedy described in any textbook of tropical medicine or skin diseases, and in view of its apparent extreme value in tinea affections I think its use should be more widely known.

Income Tax

Deduction for Consulting Room

"L. H." has taken a flat at £140 a year in a neighbourhood suitable for professional consulting, and has set aside one room for that work, leaving one room, bathroom, and kitchenette for private use. What would be the proper charge against professional receipts?

*** The excess over what might have been paid for adequate but less convenient or desirable accommodation elsewhere furnishes a guide, but the whole of that excess is not necessarily allowable if there are personal advantages also accruing from the flat taken. Taking one thing with another, however, half the £140 would seem reasonable to deduct for income tax purposes.

Residence in United Kingdom: Post-Graduate Course

"P. Q. R." is in the Colonial Service on a year's study leave. He desires to spend some time on the Continent. What is the precise effect of the six months' provision? If he is liable to income tax, can he deduct the cost of his passage and expenses in connexion with the post-graduate course?

*** The rule in question provides that a person coming to the United Kingdom for some temporary purpose only shall not be charged to tax if he "has not actually resided in the United Kingdom at one time or several times for a period equal in the whole to six months in any one year of assessment." Consequently, if "P. Q. R." desires to avoid circumstances which will make him liable to tax, it will be advisable for him to arrange his absences on the Continent so as not to be in the United Kingdom for six months *in all* between the date of his arrival and April 5th, 1933. If he becomes liable he cannot deduct the expenses referred to, as they have legally to be regarded as capital outlay (improving professional knowledge, etc.) and not wholly, necessarily, and exclusively incurred in carrying out the duties of his appointment.

War Loan Conversions

"A. M. M." points out that untaxed interest is chargeable according to the amount received from the loan in question in the previous year, and asks whether persons who convert from the 5 per cent. War Loan to the 3½ per cent. basis will next year continue to be liable on this year's—that is, the 5 per cent. basis—interest.

*** We understand that where conversion takes place the holding will be regarded as a different one for income tax purposes, and that the 3½ per cent. interest will be taxed next year on the amount received in that year and not on the 5 per cent. basis.

Liability of Assistant "living in"

"R. R." was acting as an assistant on a "salary of £350 a year, all found"; in fact, he was living with one of the partners in the practice. He has been assessed on £500, to include board and lodging at £3 a week. Is this correct?

*** No. If the contract of service had provided for £500 a year, of which £150 was to be regarded as satisfied by the provision of board and lodging, it would have been different. The facts are apparently that he is liable on the £350 "salary," but the additional benefit not payable in money, or convertible by "R. R." into money, does not attract liability under the old rule in Tennant *v.* Smith.

Residence in the Colonies

"S. W." arrived in England on May 1st of this year retrenched from a colonial medical service. During the year ended April 5th, 1932, he was in the United Kingdom for one month only. Is he liable to British income tax for 1931–2?

*** On the facts, No. Presumably when "S. W." went to take up his colonial appointment two years or more ago he intended to sever his residential connexion with this country, and, in fact, he maintained no residence here. Consequently, such part of 1931–2 as he spent in the United Kingdom was spent as a colonial resident coming here for a temporary purpose only. His liability will therefore be confined to income arising in the United Kingdom, and even then he will be entitled to deduct a part of the usual personal allowances.

LETTERS, NOTES, ETC.

Light at Last

We have received a communication headed "The Next Advance in Medicine" from the Rev. R. P. Byers, M.A., B.D., of Toronto. Not feeling sure whether it is meant as a contribution to medicine or as a contribution to the gaiety of the medical profession, we have decided to publish Mr. Byers's letter verbatim and literatim, and leave our readers to judge his purpose for themselves.

"Let me at once state that the next important advance in Medicine is a dependable classification of the Diseases. It is coming and is due to the use of a more delicate method than the Scientific. There is of course no lack of terms to represent the Diseases, but for want of precise classification the actual number of the Diseases has not yet been determined and much less the order in which they occur. It is commonly believed that the Diseases are decidedly numerous, whereas they are decidedly few. Strictly speaking, there are only twelve Diseases and they divide into four main Diseases and four subsidiary Diseases and four supplementary Diseases. For instance Tuberculosis is the first main Disease and Bronchitis is the first subsidiary Disease and Pleurisy is the first supplementary disease. But while the Diseases are limited to twelve, each one of them subdivides into five types and thirty antitypes and this it is that makes any of the Diseases really multiple rather than simple. The idea for instance that Tuberculosis is exclusively a disease of the lungs was long ago and necessarily abandoned. But though the Diseases are so few, the term 'Diseases' is very widely applied and this leads to confusion. For instance the Disorders which number eight and also divide into five types and thirty antitypes must sharply be distinguished from the Diseases. Thus Indigestion is the first Disorder and Rheumatism is the second Disorder. Then too the ten Illnesses are often called Diseases as are also the ten Ailments and the ten Complaints and the ten Indispositions and the ten Unwellnesses and the ten Troubles. But all these latter differ from both Diseases and Disorders by being simple i.e. not dividing into five types and thirty antitypes. For instance Diabetes is not a Disease but the tenth Ailment and Tonsilitis is the ninth Complaint. The nexus between the Diseases and the Disorders is Sickness. The twelve Diseases are the twelve modes of Sickness and the eight Disorders are the eight extramodes of Sickness. But the types and antitypes of the Diseases and of the Disorders and of Sickness itself are the non-modes of Sickness or the Affections, which number 770. So the Affections are more than sixty times as numerous as the Diseases."

Instruments of Historical Importance

Letters have lately appeared in the lay press over the signatures of Lord Rutherford and others asking for the co-operation of anyone possessing pieces of apparatus likely to be of historical importance. In 1925 the Institute of Physics appointed a committee to advise on the preservation of such apparatus. This committee is anxious to trace any pieces with which fundamental research in physical science has been carried out, and to arrange for their preservation. The committee has also entered upon the task of drawing up a catalogue of such pieces. Several pieces of great historical importance have already been secured for the nation, and are now housed in the Science Museum at South Kensington, and the response to the letters recently published has brought to light several other important pieces. Some articles describing and cataloguing such pieces are published from time to time in the *Journal of Scientific Instruments*. Many of our readers may have such apparatus in their possession or under their charge, and the secretary of the Institute of Physics, 1, Lowther Gardens, Exhibition Road, London, S.W.7, will be grateful for any information that will assist in tracing such pieces or in completing the catalogue.

Chemical Warfare and Disarmament

"HOPEFUL" writes: The interesting annotation on chemical warfare and disarmament (July 9th, p. 66) ends on a note which seems unduly pessimistic. The writer says that "it is difficult to see a solution apart from the closing of all chemical and bacteriological laboratories." This is quite true if interpreted to mean that in the event of a war lasting longer than a year such laboratories can be converted to war uses, suitable containers for the destructive agents can be manufactured, and workers be taught how to fill the containers—a highly skilled operation. If, however, the manufacture of containers be prevented (as has been done in Germany) there will be a time lag of months before the forbidden weapons can be used. Major Lefebure, an authority on arms manufacture and himself engaged in the chemical industry, has given examples in his book *Scientific Disarmament* (Benn, London) of the time lag in the production of various weapons in the last war after they had been approved for production. This lag hinders sudden and unexpected offensives, and so gives time for negotiations when disputes arise. Doctors who know the waste of war and the human suffering which it brings will wish to direct the heroism and daring of mankind in other directions. It would be a pity if discouragement should come to them from the most influential organ of the medical profession in Great Britain.

Anencephaly in Sequence

Dr. H. F. ELLIS (Hyde) writes: The following should be of interest in view of the unusualness of monsters occurring in successive pregnancies following the birth of a normal child; also because of the behaviour of the patient's heart. The obstetrical history is as follows: In July, 1927, the patient had a miscarriage at approximately three months. In April, 1930, she was delivered by forceps of a normal male child, who remains perfectly healthy. During this pregnancy the patient developed such severe cardiac trouble that the question of therapeutic abortion was raised, but was refused by the patient. After the confinement the heart settled down, and became normal. In March, 1931, the patient delivered herself of a female child—an anencephalic foetus—which was born dead. During the pregnancy there was again such severe cardiac trouble that the patient spent the last two months of the pregnancy in bed. On June 4th, 1932, the patient again delivered herself of another female anencephalic foetus—born dead. During this pregnancy there was no cardiac trouble, and the patient is doing well.

Cutting off the Nose

The surgeon in charge of a large ear, nose, and throat department sends us a postcard he has received from one of his out-patients. This heroic lady writes: "Dear Sir, Just a line to let you now my Nose is still the same. I have made my mind up to have it removed, will you kindly let me now when."

Poor Litigants

The SECRETARY OF THE BENTHAM COMMITTEE (1, Lincoln's Inn Fields, W.C.2) writes: This committee, the executive of the London Council of Poor Man's Lawyers, would welcome assistance by the doctors who have attended poor people injured in street accidents or at their work. Thousands of these persons are seen by the Poor Man's Lawyers, and a simple preliminary report is often all that is wanted upon which to base the advice, but there are times when the poor person cannot find the fee. The hospitals are concerned to see their patients are righted, and we appeal to the generosity of the medical profession and the hospitals to give such reports when the Poor Man's Lawyer certifies that it is a proper case.

Vacancies

Notifications of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 73, 74, 75, 76, 80, and 81 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 78 and 79.

A short summary of vacant posts notified in the advertisement columns appears at page 182.

Naval and Military Appointments

ROYAL NAVAL MEDICAL SERVICE

Surgeon Captains N. S. Meiklejohn, D.S.O., to the *Vivid*, for R.N. Barracks; F. L. Smith to the *Victory*, for R.N. Barracks.

Surgeon Commanders F. St. B. Wickham, O.B.E., to the *Victory*, for Royal Marine Infirmary, Portsmouth; H. H. Babington to the *Pembroke*, for Chatham Hospital; J. G. Boal to the *Egmont*, for the *Maine*; A. W. Gunn to the *Dolphin*; C. H. M. Gimlette to the *Medway*.

Surgeon Lieutenant Commanders J. J. Keevil to the *Dauntless*; W. P. E. McIntyre to the *Egmont*, for Malta Hospital; H. W. Strong to the *Victory*, for Portsmouth Dockyard.

Surgeon Lieutenants S. Jenkinson to the *Alecto*; W. S. Davidson to the *Cicala*.

The seniority as Surgeon Lieutenant of S. J. Savage has been adjusted to September 9th, 1928.

ROYAL AUSTRALIAN NAVY

Surgeon Lieutenant Commander R. Martin to be Surgeon Commander.

ROYAL NAVAL VOLUNTEER RESERVE

Surgeon Commander L. C. D. Irvine to the *Victory*, for Haslar Hospital.

Surgeon Lieutenant Commander H. Parry-Price to the *Tiverton*.

Surgeon Lieutenants H. G. Ungley, A. S. Pearson, and J. F. Corr to the *Victory*, for Haslar Hospital; H. A. M. Whitby to the *Victory*, for R.N. Barracks; W. Gough (probationary) to the *Concord*.

Probationary Surgeon Sublieutenant F. W. Baskerville to the *Victory*, for Haslar Hospital.

ROYAL ARMY MEDICAL CORPS

Captain A. M. Simson to be Major.

ROYAL AIR FORCE MEDICAL SERVICE

J. F. Dales is granted a short service commission as a Flying Officer for three years on the active list.

AUXILIARY AIR FORCE: MEDICAL BRANCH

Flying Officer A. T. G. Thomas (No. 604 County of Middlesex Bomber Squadron) to be Flight Lieutenant.

VACANCIES

BEDFORD COUNTY HOSPITAL.—Second H.S. (male, unmarried).

BIRMINGHAM AND MIDLAND HOSPITAL FOR WOMEN.—H.S.

BIRMINGHAM AND MIDLAND SKIN HOSPITAL.—Clinical Assistants in O.P. Consulting Room.

BIRMINGHAM UNIVERSITY.—Assistant Lecturer in Anatomy.

BOURNEMOUTH: ROYAL VICTORIA AND WEST HANTS HOSPITAL.—H.S. (male).

BRIGHTON: ROYAL SUSSEX COUNTY HOSPITAL.—C.H.S. (male).

BURNLEY: VICTORIA HOSPITAL.—H.S. (male).

BURY INFIRMARY, LANCS.—(1) H.S. to Special Departments. (2) Third H.S.

CENTRAL LONDON THROAT, NOSE, AND EAR HOSPITAL, Gray's Inn Road, W.C.1.—Assistants in O.P. Department.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE HEART AND LUNGS, Victoria Park, E.—H.P. (male).

COVENTRY AND WARWICKSHIRE HOSPITAL.—(1) H.S. for Aural and Ophthalmic Departments. (2) C.H.S.

DONCASTER ROYAL INFIRMARY.—C.H.S.

DUBLIN: DR. STEEVENS' HOSPITAL.—Assistant Resident S.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark, S.E.1.—H.S. (male).

GUILDFORD: ROYAL SURREY COUNTY HOSPITAL.—H.S.

HARTLEPOOLS HOSPITAL.—H.S.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, W.C.—Medical and Surgical Clinical Assistants (males) in O.P. Department.

HULL ROYAL INFIRMARY.—(1) Third H.S. (2) A.H.P. Males.

INVERNESS COUNTY COUNCIL.—Local Medical Officer for part of North Uist.

INVERNESS: ROYAL NORTHERN INFIRMARY.—H.P.

JERUSALEM: ST. JOHN OPHTHALMIC HOSPITAL.—R.H.S.

KETTERING AND DISTRICT GENERAL HOSPITAL.—Hon. Radiologist.

KING EDWARD VII WELSH NATIONAL MEMORIAL ASSOCIATION.—Third A.R.M.O. at Glan Ely Hospital.

LANCASHIRE COUNTY COUNCIL.—J.A.M.O. (male, unmarried) for Wrightington Hospital.

LINCOLN COUNTY HOSPITAL.—J.H.S. (male, unmarried).

LIVERPOOL AND SAMARITAN HOSPITAL FOR WOMEN.—H.S.

LONDON COUNTY COUNCIL.—R.A.M.O. at St. Charles' Hospital, Ladbroke Grove, W.

LORD MAYOR TRELOAR CRIPPLES' HOSPITAL, Alton.—A.R.M.O. (male).

MACCLESFIELD GENERAL HOSPITAL.—R.M.O.

MANCHESTER: ANCOATS HOSPITAL.—H.S. (Orthopaedic).

MANCHESTER CITY.—(1) A.M.O.'s at Withington Hospital (unmarried). (2) A.M.O. (male, unmarried) at Booth Hall Hospital.

MANCHESTER ROYAL INFIRMARY.—Surgical Officer to O.P.

MILLER GENERAL HOSPITAL, Greenwich Road, S.E.—C.O. (male, unmarried).

NEWCASTLE-UPON-TYNE: ROYAL VICTORIA INFIRMARY.—R.M.O. (male).

NEWPORT, MON.: ROYAL GWENT HOSPITAL.—J.R.M.O. (male).

NORFOLK AND NORWICH HOSPITAL.—Hon. S.

NOTTINGHAM HOSPITAL FOR WOMEN.—H.S.

OLDHAM ROYAL INFIRMARY.—H.S.

PRINCESS BEATRICE HOSPITAL, Finborough Road, S.W.—Hon. Clinical Assistant.

ROTHERHAM HOSPITAL.—C.H.S. (male).

ROYAL WATERLOO HOSPITAL FOR CHILDREN AND WOMEN, S.E.—Hon. A.P.

ST. JOHN'S HOSPITAL, Lewisham.—R.M.O.

SALFORD ROYAL HOSPITAL.—C.H.S. (male).

SHEFFIELD: CHILDREN'S HOSPITAL.—H.S.

SHEFFIELD: JESSOP HOSPITAL FOR WOMEN.—(1) H.S. (2) A.H.S. Males.

SHEFFIELD: ROYAL INFIRMARY.—(1) Aural H.S. (2) Assistant Aural and Ophthalmic H.S.

SOUTH SHIELDS: INGHAM INFIRMARY.—Junior H.S. (male).

STOCKPORT INFIRMARY.—J.R.S. (male).

STROUD GENERAL HOSPITAL.—H.S.

SUNDERLAND: ROYAL INFIRMARY.—H.P. (male).

TUNBRIDGE AND COUNTIES GENERAL HOSPITAL.—H.S. (male, unmarried).

WALLASEY: VICTORIA CENTRAL HOSPITAL.—J.H.S. (male).

WALSALL GENERAL HOSPITAL.—H.S.

WOLVERHAMPTON: ROYAL HOSPITAL.—H.P.

CERTIFYING FACTORY SURGEON.—The appointment at Sandbach (Cheshire) is vacant. Applications to the Chief Inspector of Factories, Home Office, Whitehall, S.W.1.

This list is compiled from our advertisement columns, where full particulars are given. To ensure notice in this column advertisements must be received not later than the first post on Tuesday morning. Further unclassified vacancies will be found in the advertising pages.

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Diary of Central Meetings

JULY

23 Sat. **Council**, 9 a.m., B.M.A. House.

26 Tues. **Council**, 10 a.m., Imperial Institute, South Kensington.

APPOINTMENTS

BLIGH, John Murray, M.D.Liverp., F.R.C.P., Honorary Physician to the Royal Liverpool Children's Hospital.

BURKE, Noel H. M., M.R.C.S., L.R.C.P., D.P.M., D.M.R. and E., Medical Superintendent, Cell Barnes Colony for Mental Defectives, St. Albans, Herts.

MORRIS, Leslie, M.D., F.R.C.S., Honorary Orthopaedic Surgeon, Royal Infirmary, Leicester.

CERTIFYING FACTORY SURGEONS.—C. W. N. Anderson, L.R.C.P. and S.I., for the Talybont District, Cardigan; W. J. A. Laird, L.R.C.P. and S.I., for the Lenham District, Kent.

BIRTHS, MARRIAGES, AND DEATHS

The charge for inserting announcements of Births, Marriages, and Deaths is 9s., which sum should be forwarded with the notice not later than the first post on Tuesday morning, in order to ensure insertion in the current issue.

BIRTHS

ANDERSON.—On July 13th, the wife of J. S. Anderson, M.D., Seacroft Hospital, Leeds (Mary Stirk, M.R.C.S., L.R.C.P.), of a daughter.

DOUGLAS.—On July 15th, 1932, to Dr. and Mrs. John Douglas of the City Hospital, Bradford, a daughter.

LILLIE.—On July 17th, to Dr. and Mrs. J. P. Lillie of Lubeck House, 796, Washwood Heath Road, Birmingham, a son.

DEATHS

CURRIE.—On July 12th, at 107, Eastbourne Road, Darlington, John Currie, D.S.O., M.R.C.S.Eng., B.Sc.

ELLISON.—On July 11th, at 120, Domestic Street, Leeds, Arthur Ellison, M.R.C.S.Eng., L.R.C.P.Lond.

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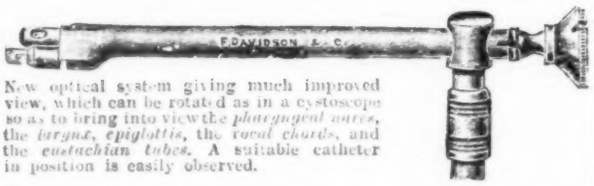

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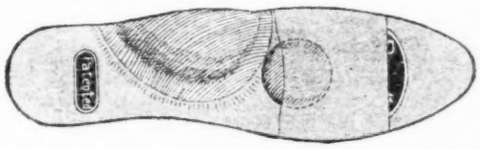

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